1990

Depositional environments and sandstone diagenesis in the Tyler Formation (Pennsylvanian), western North Dakota

Larry R. Quandt
University of North Dakota

DEPOSITIONAL ENVIRONMENTS AND SANDSTONE DIAGENESIS IN THE TYLER FORMATION (PENNSYLVANIAN), WESTERN NORTH DAKOTA

by
Larry R. Quandt

Bachelor of Science, Bemidji State University, 1985

A Thesis

Submitted to the Graduate Faculty

of the

University of North Dakota

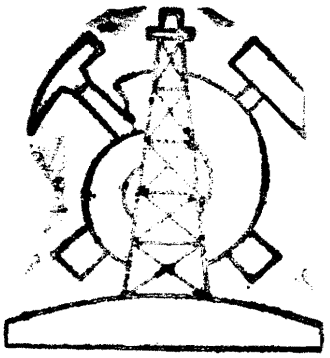
in partial fulfillment of the requirements

for the degree of

Master of Science

Grand Forks, North Dakota

May
1990



This thesis submitted by Larry R. Quandt in partial fulfillment of the requirements for the Degree of Master of Science from the University of North Dakota has been read by the Faculty Advisory Committee under whom the work has been done, and is hereby approved.

Richard D. Lefever
(Chairperson)

Kenneth Harris

Patricia E. Videtich

This thesis meets the standards for appearance and conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

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Department Geology and Geological Engineering

Degree Master of Science

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Signature Jarry R. Evanoff

Date April 24, 1990

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ACKNOWLEDGEMENTS

I would like to thank my advisory committee, Drs. Richard D. LeFever, Kenneth L. Harris, and Patricia E. Videtich, for their helpful suggestions and critical reviews of the manuscript. I wish to thank the University of North Dakota, the Graduate School, and the Department of Geology and Geological Engineering for allowing me to carry out my graduate work here.

I would like to thank the North Dakota Geological Survey for allowing me access to well logs and files, and the Wilson M. Laird Core and Sample Library. Sidney Anderson and Julie LeFever, from the survey, are acknowledged for their assistance in well log interpretation. I would like to thank Rod Stoa and Mickey Rood for pulling and slabbing core.

I would like to thank Sun Exploration and Production Company for their financial support. Part-time employment provided by the Energy and Environmental Research Center and a Graduate Teaching Assistantship supported by the Department of Geology and Geological Engineering were appreciated. I would also like to thank the Department of Geology and Geological Engineering and Energy and Environmental Research Center for allowing me access to facilities and the scanning electron microscope/microprobe in the Natural Materials Analytical Laboratory.

A special thanks goes to my parents, Roy and Joan, and brothers, Mark and Duane, and my relatives and friends for their patience, understanding, and moral support. I also wish to thank my fellow graduate students for their friendship and helpful suggestions.

ABSTRACT

Thirty-three oil well cores were examined and approximately 3,100 oil well logs were used to determine the depositional environments of the Tyler Formation (Pennsylvanian) in northwestern North Dakota. Ninety sandstone thin-sections were described and twenty-nine sandstone samples were analyzed by scanning electron microscope/X-ray microanalysis techniques to characterize sandstone diagenesis.

The Tyler Formation in northwestern North Dakota is correlative with the lower unit of the Tyler Formation in southwestern North Dakota. The upper unit of the Tyler Formation in southwestern North Dakota is not present in northwestern North Dakota, contrary to previous workers suggestions. The Tyler Formation in northwestern North Dakota consists of varicolored mudstone, medium-gray claystone, thin bituminous coal beds, dark-gray shale and limestone, and gray sandstone. The upper unit of the Tyler Formation in southwestern North Dakota consists of gray sandstone, dark-gray limestone and shale, and varicolored mudstone.

Lenticular sandstones present in the middle and rarely at the base of the formation, which occur in northeast-southwest linear trends, indicate that the Tyler Formation in northwestern North Dakota was deposited as a river channel system on a low-lying, prograding coastal plain. Depositional environments associated with the coastal plain include river channels, flood plains, lakes, estuaries, caliche paleosols, and backswamps. Throughout deposition of the Tyler Formation, several major river channels flowed in a predominantly southwest direction across a low-lying coastal plain and transported

quartz sand toward a delta or shoreline, not identified in this study, at the margin of a shallow epeiric sea.

Initially, the presence of detrital clay and infiltration clay and early hematite and chlorite coatings on quartz grains was the most important factor influencing porosity reduction in Tyler sandstones. The first major diagenetic event responsible for porosity reduction was the development of authigenic quartz overgrowths. Other cements that have contributed to porosity reduction in Tyler sandstones include amorphous silica (opal), calcite, ankerite, siderite, anhydrite, barite, hematite, and pyrite, In addition, authigenic kaolinite, illite, and chlorite have reduced porosity in Tyler sandstones. Dissolution of carbonate cement resulted in the formation of secondary porosity.

Sandstone diagenesis took place shortly after sand was deposited in a marine environment, while sediments were being flushed with meteoric ground water, and while sands were being flushed with chemically evolved pore water released after diagenesis and compaction of interbedded mud-rich sequences.

River-channel sandstones in northwestern and southwestern North Dakota and barrier-island sandstones present only in southwestern North Dakota contain considerable amounts of intergranular porosity. Petroliferous sandstones in southwestern North Dakota are fine- to medium-grained, well-sorted, texturally mature quartzarenites. Preservation of porosity is related to depositional and diagenetic processes.

INTRODUCTION

General

The Tyler Formation in North Dakota consists of a varied sequence of shale, claystone, mudstone, sandstone, limestone, and coal. The Tyler Formation contains a Late Mississippian-Pennsylvanian transitional fauna (Ziebarth, 1962, 1964, 1972), but is considered to be mostly Pennsylvanian in age (Harris, 1958; Willis, 1959; Foster, 1961; Grenda, 1977).

Geologic Setting and History

Regional Structure

The Williston Basin is a structural and sedimentary intracratonic basin on the western distal edge of the Canadian Shield, occupying much of North Dakota, northwestern South Dakota, the eastern quarter of Montana, a significant part of southern Saskatchewan, and a portion of southwestern Manitoba (Fig. 1). Sedimentary rocks deposited during all periods of Phanerozoic time are present in the North Dakota portion of the Williston Basin (Bluemle and others, 1981, 1986).

Structural trends within the Williston Basin reflect major north and northwest directional changes in the structure of the Rocky Mountain Belt (Gerhard and others, 1982). Within the North Dakota portion of the Williston Basin, the major structural features are the north-south-trending Nesson, Little Knife, and Billings Anticlines and the northwest-southeast-trending Antelope and Cedar Creek Anticlines (Fig. 2). Northwest-southeast-trending lineaments include the Bismark-Williston Lineament and the Red Bank-Alexander Trend (Fig. 2).

Figure 1 - Location of the study areas and areal extent of the Tyler Formation and correlative rock units in the Williston Basin and surrounding areas. The basin outline, from Laird (1956), is the zero (sea-level) elevation of the top of the Cretaceous Dakota Group. The outline of the Tyler Formation is from Mallory (1972) and Maughan (1984).

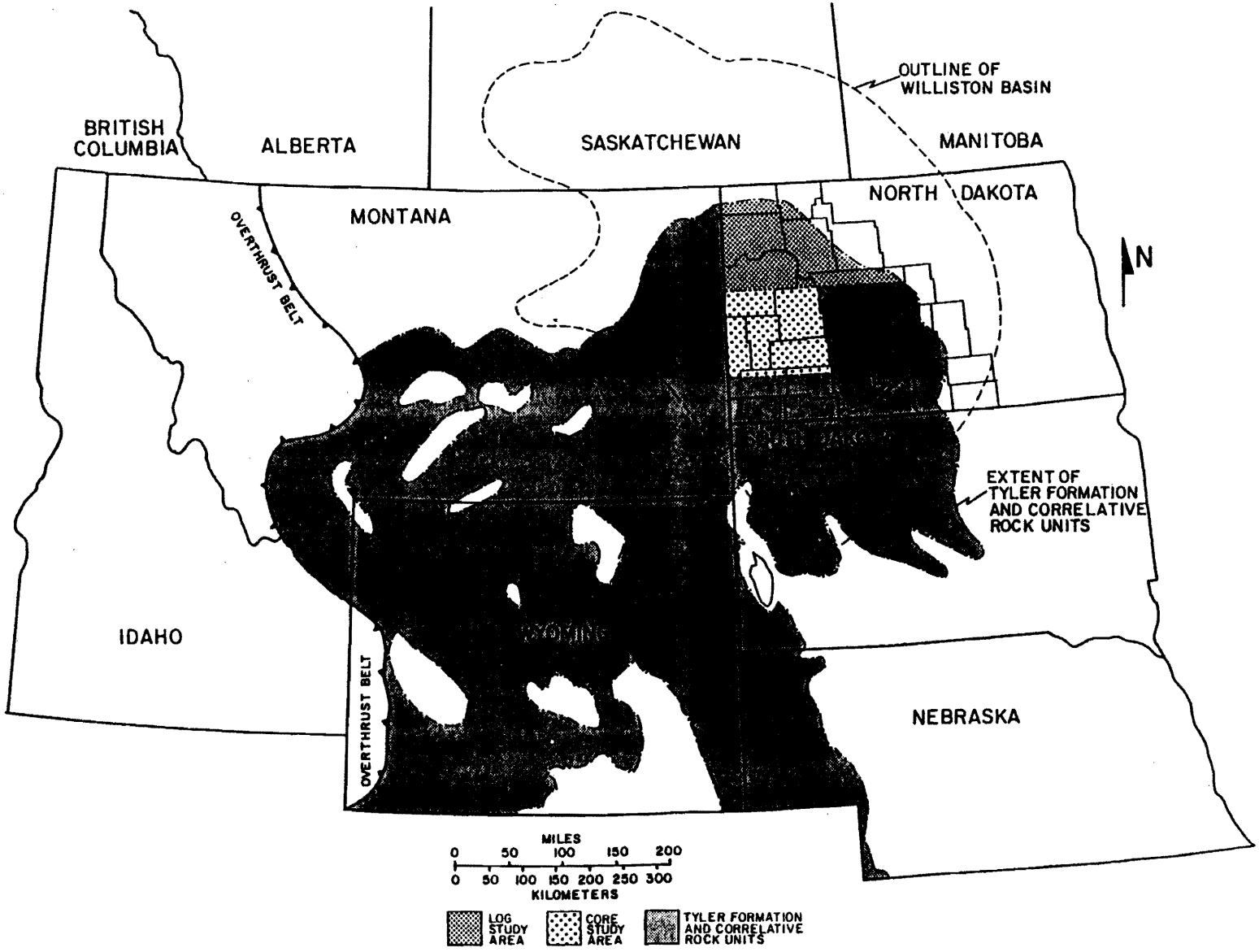
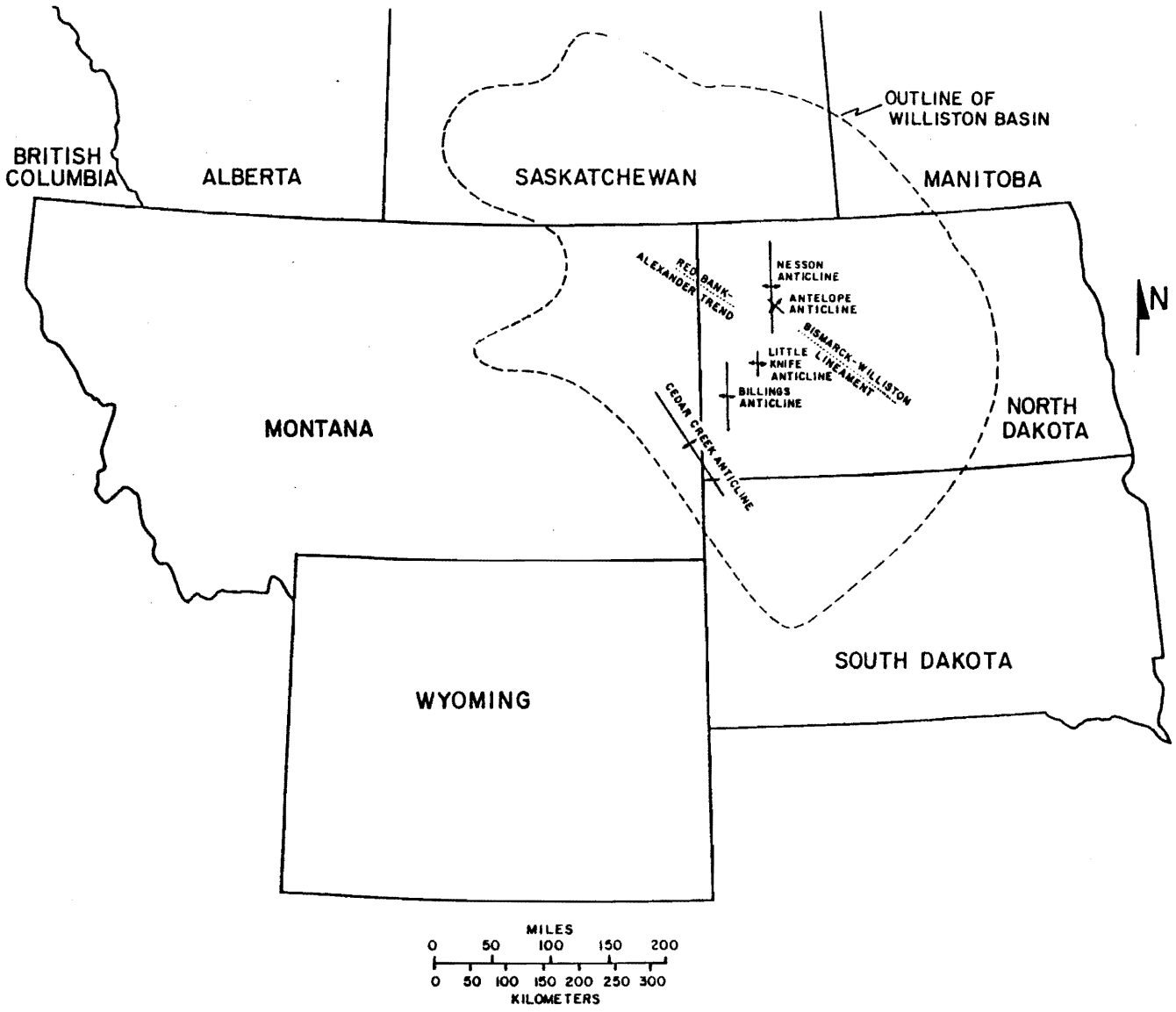

OUTLINE OF
WILLISTON BASIN
BRITISH
COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
NORTH DAKOTA
MONTANA
OVERTHRUST BELT
N
EXTENT OF
TYLER FORMATION
AND CORRELATIVE
ROCK UNITS
IDAHO
WYOMING
OVERTHRUST BELT
NEBRASKA
MILES
0 50 100 150 200
0 50 100 150 200 250 300
KILOMETERS
LOG
STUDY
AREA
CORE
STUDY
AREA
TYLER FORMATION
AND CORRELATIVE
ROCK UNITS

Figure 2 - Major geologic structures of the Williston Basin in North Dakota. After Fischer and Bluemle (1988).


BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
OUTLINE OF WILLISTON BASIN
RED BANK-ALEXANDER TREND
NESSON ANTICLINE
ANTELOPE ANTICLINE
BISMARCK-WILLISTON LINEAMENT
LITTLE KNIFE ANTICLINE
BILLINGS ANTICLINE
CEDAR CREEK ANTICLINE
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
N
MILES
0 50 100 150 200
0 50 100 150 200 250 300
KILOMETERS

The setting for Tyler sediments is dependent upon structural developments on the continental shelf during the preceding Mississippian Period (Maughan and Roberts, 1967; Smith and Gilmour, 1979; Maughan, 1975, 1984). At the end of the Mississippian Period or the beginning of the Pennsylvanian Period, the Williston Basin became connected to the Cordilleran Miogeosyncline through the Big Snowy Trough, flanked on the north by the Alberta Shelf and on the south by the Wyoming Shelf (Maughan and Roberts, 1967; Smith and Gilmour, 1979; Maughan, 1975, 1984) (Fig. 3). Epeirogenic uplift of the Wyoming Shelf and Alberta Shelf during the Late Mississippian provided a source area for sediment during Tyler time in the Big Snowy Trough (Maughan and Roberts, 1967; Smith and Gilmour, 1979; Maughan, 1975, 1984). The Williston Basin region was a mildly subsiding area flanked by positive areas (Maughan and Roberts, 1967; Smith and Gilmour, 1979; Maughan, 1975, 1984). The source area for Tyler sediment in North Dakota was from uplift and erosion of the Canadian Shield, to the north and east, and the Transcontinental Arch and Siouxia Ridge to the south and east of the basin. Another source for sediment may be from the erosion of older sedimentary rocks such as the underlying Kibbey Formation (Mississippian), as suggested by Harris (1958) and Foster (1961) and illustrated by Ziebarth (1962, 1964).

Regional Stratigraphy

Freeman (1922) proposed the name Tyler sandstone for "white to red sandstones 300 feet thick interbedded with varicolored shale", located below the Alaska Bench Limestone (Pennsylvanian) (Freeman, 1922), around the Big Snowy Mountains in central Montana (Fig. 4).

Figure 3 - Principal paleogeographic and tectonic elements affecting deposition of the Tyler Formation. After Maughan (1984).

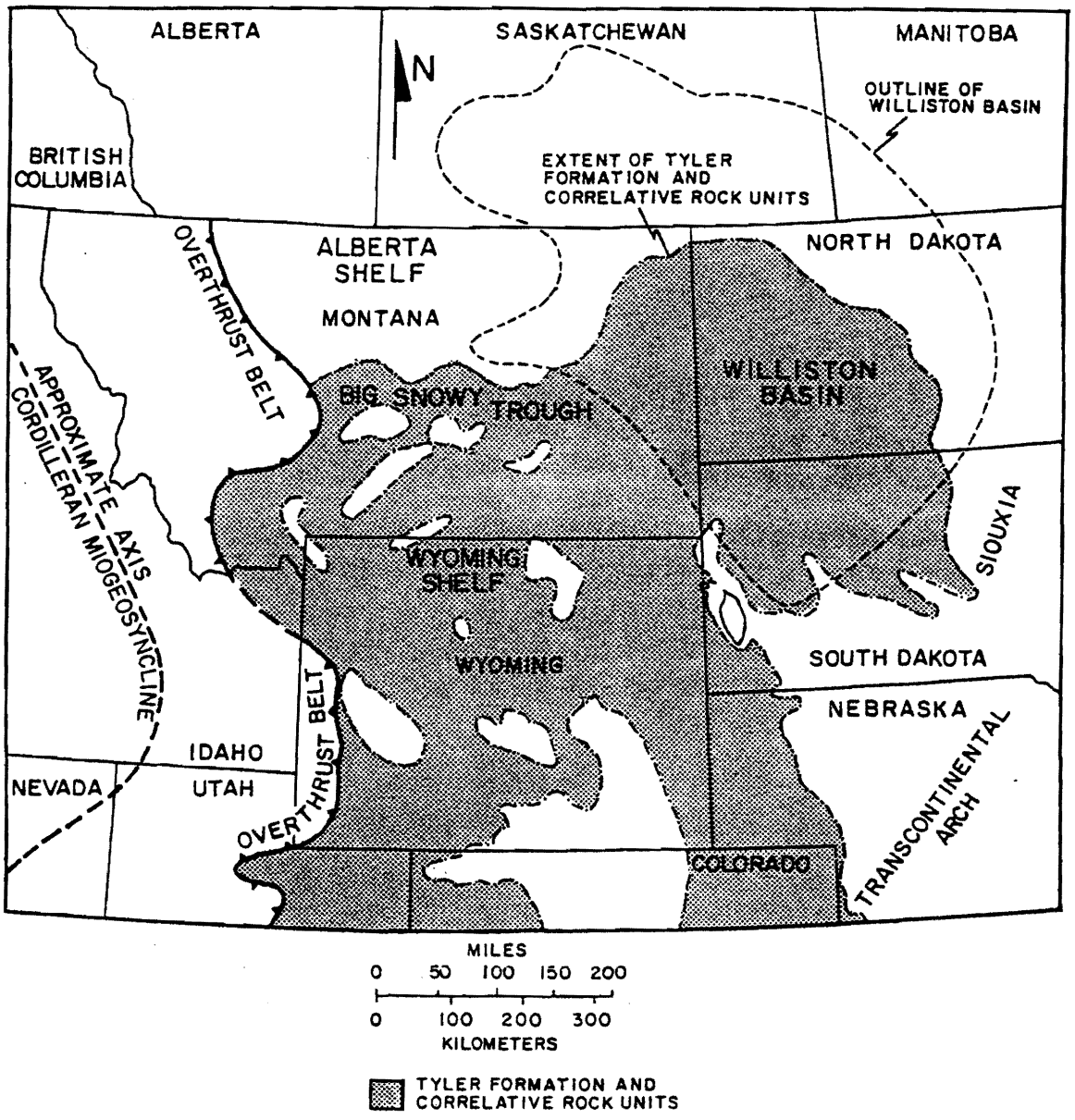
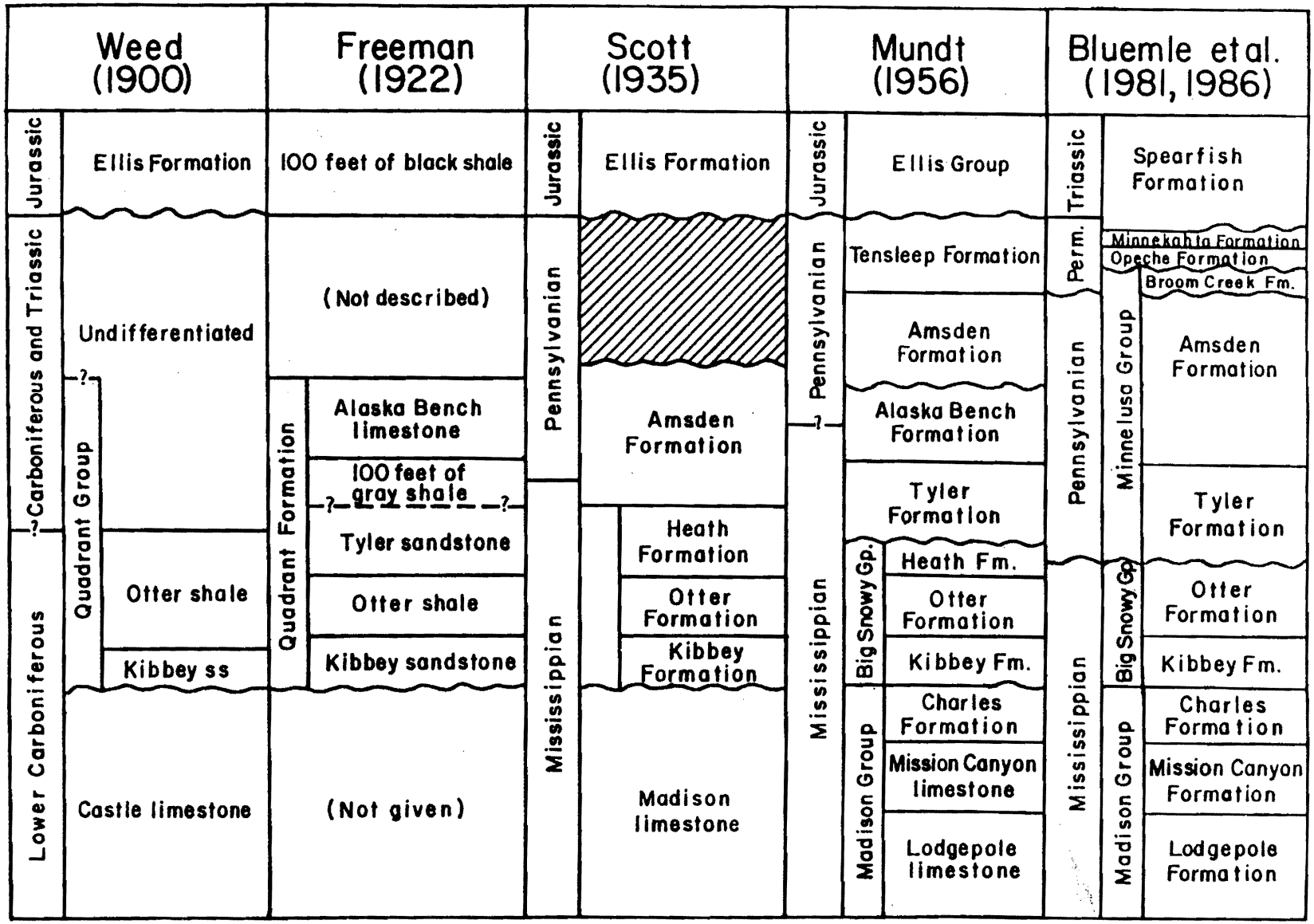

ALBERTA
SASKATCHEWAN
MANITOBA
N
OUTLINE OF WILLISTON BASIN
BRITISH COLUMBIA
EXTENT OF TYLER FORMATION AND CORRELATIVE ROCK UNITS
ALBERTA SHELF
NORTH DAKOTA
MONTANA
OVERTHRUST BELT
APPROXIMATE AXIS CORDILLERAN MIOGEOSYNCLINE
BIG SNOWY TROUGH
WILLISTON BASIN
SIOUXIA
WYOMING SHELF
WYOMING
SOUTH DAKOTA
NEBRASKA
IDAHO
NEVADA
UTAH
OVERTHRUST BELT
TRANSCONTINENTAL ARCH
COLORADO
MILES
0 50 100 150 200
0 100 200 300
KILOMETERS
TYLER FORMATION AND CORRELATIVE ROCK UNITS

Figure 4 - Development of the stratigraphic nomenclature for the Tyler Formation and underlying and overlying rock units.


Weed (1900)
Freeman (1922)
Scott (1935)
Mundt (1956)
Bluemle et al. (1981, 1986)
Jurassic
Ellis Formation
Carboniferous and Triassic
Undifferentiated
Quadrant Group
Otter shale
Kibbey ss
Lower Carboniferous
Castle limestone
100 feet of black shale
(Not described)
Quadrant Formation
Alaska Bench limestone
100 feet of gray shale
Tyler sandstone
Otter shale
Kibbey sandstone
(Not given)
Jurassic
Pennsylvanian
Mississippian
Ellis Formation
Amsden Formation
Heath Formation
Otter Formation
Kibbey Formation
Madison limestone
Jurassic
Pennsylvanian
Mississippian
Ellis Group
Tensleep Formation
Amsden Formation
Alaska Bench Formation
Tyler Formation
Big Snowy Gp.
Heath Fm.
Otter Formation
Kibbey Fm.
Madison Group
Charles Formation
Mission Canyon limestone
Lodgepole limestone
Triassic
Perm.
Pennsylvanian
Mississippian
Spearfish Formation
Minnekahta Formation
Opeche Formation
Broom Creek Fm.
Minnelusa Group
Amsden Formation
Tyler Formation
Big Snowy Gp.
Otter Formation
Kibbey Fm.
Madison Group
Charles Formation
Mission Canyon Formation
Lodgepole Formation

Mundt (1956) applied the Tyler Formation not only to the sandstones, but also to the black, gray, and reddish shales within the sandstones and a marine limestone tongue locally present near the top of the formation, located above the Heath (Scott, 1935), Otter Shale (Weed, 1900), and Otter Formations (Mississippian) (Scott, 1935), and below the Alaska Bench (Mundt, 1956) and Amsden Formations (Pennsylvanian) (Scott, 1935) (Fig. 4).

The Tyler Formation (Fig. 1) underlies most of western North Dakota (Mallory, 1972; Anderson, 1974; Maughan, 1984) and is included in the Minnelusa Group (Pennsylvanian-Permian) along with the Amsden Formation and Broom Creek Formation (Permian) (Bluemle and others, 1981, 1986) (Fig. 4). The Tyler Formation unconformably overlies the Otter and Kibbey Formations and Madison Group (Mississippian) and conformably underlies the Amsden Formation (Bluemle and others, 1981, 1986) (Fig. 4). The Madison Group consists of limestone, dolostone, evaporites, and shale. The Kibbey Formation conformably overlies the Madison Group and consists of reddish-gray to light-gray, fine- to medium-grained sandstone, white to brown limestone, and reddish to variegated shale. The Otter Formation conformably overlies the Kibbey Formation and consists of greenish-gray and reddish-gray shale and gray to green limestone. The Amsden Formation consists of pinkish-gray to pale-yellowish-brown dolostone with interbeds of dark-reddish-brown shale, white to grayish-brown anhydrite, and fine-grained, gray to pale-red sandstone developed near the top of the formation. The Alaska Bench Member of the Amsden Formation is

developed at the base and consists of pinkish-gray to pale-yellowish-brown limestone (Bluemle and others, 1986).

Previous Work on the Tyler Formation in North Dakota

Interpretations of the depositional environments in the Tyler Formation have progressed from general surface and subsurface regional studies to more detailed studies in Montana and North Dakota. Lithologic and paleontologic evidence in the Tyler Formation indicates a range from fresh-water through brackish-water to marine conditions (Harris, 1958; Willis, 1959; Foster, 1961; Ziebarth, 1962, 1964, 1972; Land, 1976, 1979; Grenda, 1977; Sturm, 1982a, 1982b, 1983, 1987; Maughan, 1975, 1984). Therefore, distinctly different depositional environments existed simultaneously in adjacent areas and fluctuated many times between fresh-water and marine conditions.

In the Rocky Ridge oil field, Billings County, southwestern North Dakota, Harris (1958) suggested that the Tyler Formation was rapidly deposited in a shallow, fresh- or brackish-water lagoon, while sandstones were deposited as offshore bars in a shallow sea, possibly under estuarine conditions.

In western North Dakota, Willis (1959) characterized the depositional environment of the Tyler Formation as a restricted, brackish-water lagoon. He interpreted the clean and well-sorted sandstones associated with the unconformity at the base of the Tyler Formation as offshore bars deposited in a shallow, nearshore, brackish-water environment. He interpreted other sandstones to have been deposited in an environment similar to that of a modern beach.

In southwestern North Dakota, Foster (1961) characterized the depositional environments of the Tyler Formation as a broad, flat land of swamps, lagoons, mud flats, and humid jungles, in which sandstones were deposited as sluggish streams and deltas.

In southwestern North Dakota, Ziebarth (1962) suggested that the "Heath" Formation (Tyler Formation) was deposited as a nonmarine swamp which was inundated many times by the sea. He interpreted an upper sandstone (or "Fryburg sand" of Willis, 1959) as a marine, beach-bar complex and a lower sandstone (or "Fritz sand" of Willis, 1959) as a nonmarine, channel-fill deposit.

However, in a later paper, Ziebarth (1964) interpreted the upper and middle sandstones, in the Tyler Formation, as either a marine, beach-bar complex or a nonmarine, channel-fill deposit. He characterized the depositional environments of the Tyler Formation as nonmarine marsh, lagoon, swamp, and tidal-flat deposits which were inundated many times by the sea.

In western North Dakota, Ziebarth (1972) characterized the depositional environment of the Tyler Formation as a deltaic complex, similar to the upper alluvial valley portion of the Mississippi River Delta. He suggested that the Tyler Formation was deposited as nonmarine swamp and marsh deposits which were inundated many times by the sea and developed estuary deposits. He interpreted the sandstones as stream-channel, shoreline, offshore, and delta-distributary deposits. Using sandstone-shale ratios, he identified scattered areas along the Nesson anticline that show an increase in the amount of sandstone above the regional norm, and higher sandstone-shale ratios

from northwestern Burke through southern Divide and northern Williams Counties. Ziebarth also identified a major sandstone trend with an arcuate pattern through Mountrail, Dunn, Stark, and Golden Valley Counties, and a second trend, roughly perpendicular to this arcuate pattern, from Burleigh, Emmons, and Sioux Counties to Stark County. However, he did not associate these sandstone trends with any depositional environments.

In the Dickinson, South Heart, and Green River oil fields, Stark County, southwestern North Dakota, Land (1976, 1979) characterized the depositional environments of the Tyler Formation as lagoon, marsh, and mud-flat deposits. He interpreted the sandstones as barrier islands deposited along regressive shorelines. He also suggested that the development of caliche paleosols has destroyed as much as 50% of the potential reservoir rock.

In a detailed study of the fauna and flora of the Tyler Formation, Grenda (1977) suggested that southwestern North Dakota was subjected to a warm climate and fluctuations in water depth and salinity. He concluded that fossil communities indicate deposition was in a deltaic complex with the presence of terrestrial plant fragments representing coastal swamps. He identified one fossil community which inhabited the shallow water on the delta platform and three other fossil communities which inhabited deeper marine water on the delta slope and prodelta. He suggested that sandstones may represent a distributary network of channels on the delta platform.

In southwestern North Dakota, Sturm (1982a) developed a depositional model for the Tyler Formation by dividing the formation

into two units. Sturm (1987) recognized two regression-transgression cycles in the lower unit and one in the upper unit. Sturm (1982a, 1982b, 1983, 1987) interpreted the lower unit as a fluvial-deltaic environment on a delta plain and coastal plain. He identified several depositional environments in the lower unit including interdistributary-bay, marsh, swamp, tidal-flat, overbank, hammock, lagoon, estuary, prodelta, lake, and caliche paleosol deposits. He interpreted the sandstones in the lower unit as channel-fill, delta-front, and barrier-island deposits and the sandstones in the upper unit as a regressive barrier island system. He characterized the upper unit as an estuarine-lagoon environment deposited behind barrier islands and a shallow-marine to marginal-marine environment deposited in an anoxic sea in front of the barrier islands. Sturm characterized the uppermost Tyler Formation as a prograding tidal-flat environment. Sturm (1982a, 1982b, 1987) suggested that stream-channel trend, linear thickening, and deltaic sedimentation patterns in the lower unit were related to movement of basement-block faults in the Williston Basin.

In addition, Sturm (1982a, 1982b) suggested that the most important phenomena causing reduction of porosity in channel-fill and delta-front sandstones is the presence of detrital clay and/or authigenic kaolinite and pervasive anhydrite cementation, respectively. He also suggested that detrital clay coatings on quartz grains may inhibit authigenic quartz overgrowth cementation and porosity reduction in the barrier-island sandstones.

In western North Dakota, Maughan (1975, 1984) characterized the Tyler Formation as a delta similar to that of the Mississippi River

where sand, mud, and calcareous sediments were deposited in fresh-water, brackish-water, and marine environments. He identified several depositional environments in the Tyler Formation including flood-plain, natural-levee, overbank, marsh, swamp, estuary, bay, mud-flat, and lake deposits. He interpreted the sandstones as river-channel and bar-finger deposits. However, he also indicated that some of these sandstones may have been deposited as offshore bars or barrier islands, as suggested by Harris (1958), Willis, (1959), Ziebarth (1962, 1964, 1972), Land (1976, 1979) and Sturm (1982a, 1982b, 1983, 1987).

Purpose

Oil was discovered in sandstones of the Tyler Formation in southwestern North Dakota during the 1950's. There is no oil production from the Tyler Formation north of Township 148N. The purpose of this paper is to interpret the depositional environments and to produce a depositional model for sandstones in the Tyler Formation in northwestern North Dakota, as well as to characterize the diagenesis of Tyler sandstones. This study is a northward extension of Sturm's (1982a) paper. The data and interpretations in the study will aid geologists in the search for stratigraphic oil traps in the Tyler Formation and the geologists' need for knowledge about Early Pennsylvanian history in North Dakota.

METHODS OF STUDY

Oil Well Core Analysis

This study is based on oil well cores from the Wilson M. Laird Core and Sample Library and oil well logs located in the North Dakota Geological Survey. This study was divided into a core study area in southwestern North Dakota and a log study area in northwestern North Dakota (Fig. 1). Thirty-one cores were examined in the core study area in southwestern North Dakota (Figs. 1 and 5), while only two cores were taken in the log study area in northwestern North Dakota (Figs. 1 and 5). The average length of each core was 55 feet (17 m). Cores were examined and described in order to define lithofacies and lithofacies sequences and to correlate lithofacies sequences to their characteristic well log responses, facilitating recognition of lithofacies in areas where core control is sparse or nonexistent.

Core descriptions were made using a 10X hand lens and a binocular microscope. Siliciclastic rocks were classified according to Folk (1974). Carbonates were classified according to Dunham (1962). However, "lime mudstone" was substituted for the term "mudstone" to avoid confusion between siliciclastic and carbonate rocks. The terminology of Cole and Picard (1975) was helpful in describing the primary and secondary sedimentary structures in the fine-grained siliciclastic and carbonate rocks. The color of the rocks was described using the color chart of Goddard and others (1948). Selected lithologies were subjected to scanning electron microscope/X-ray microanalysis techniques in order to determine minerals present.

Figure 5 - Location map of cores studied.

Photographs of entire cores and individual lithologies were taken for later reference.

Oil Well Log Analysis

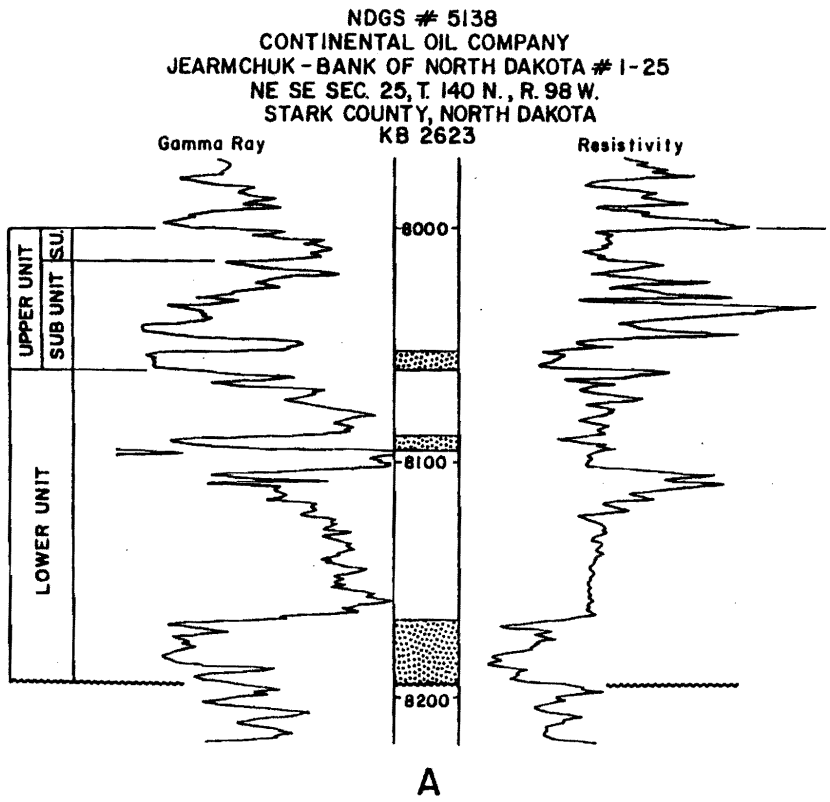
Approximately 3,100 oil well logs north of Township 148N in the log study area (Fig. 1) were used to determine formation and sandstone thickness, contour formation thickness, map sandstone distribution, and to correlate and interpret lithologies from core data. Well control for the study in northwestern North Dakota is approximately thirteen wells per township. Most of the wells are concentrated on the Nesson Anticline and west of the anticline. Some townships east of the anticline and in the southeastern portion of the log study area did not contain any wells.

Originally, the Tyler Formation in northwestern North Dakota was divided into a lower unit and upper unit on the basis of well log character and lithology, as suggested by Sturm (1982a) in southwestern North Dakota (Fig. 6A). However, the "upper unit" in northwestern North Dakota was initially erroneously picked on the well logs and was determined to be the overlying Amsden Formation. Correlation of the upper unit in southwestern North Dakota indicates that it pinches out northward before reaching northwestern North Dakota. Therefore, the Tyler Formation was not divided and the base and top of the formation were picked on the well logs in northwestern North Dakota (Fig. 6B).

Sandstone Petrography

Ninety sandstone thin-sections from cores were described petrographically to ascertain overall mineralogic and textural character, framework constituents, cements and authigenic clay

Figure 6 - Sample well logs of the Tyler Formation in southwestern (A) and northwestern (B) North Dakota.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CONTINENTAL OIL COMPANY
JEARMCHUK - BANK OF NORTH DAKOTA # 1-25
NE SE SEC. 25, T. 140 N., R. 98 W.
STARK COUNTY, NORTH DAKOTA
KB 2623
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SUB UNIT
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LOWER UNIT
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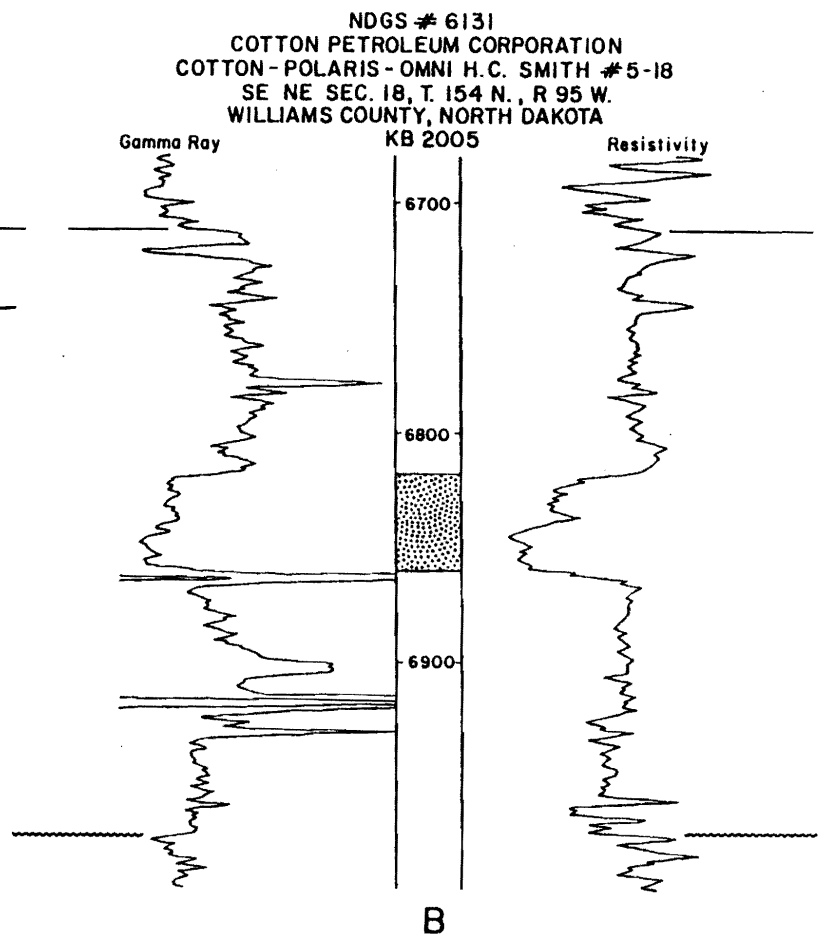
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WILLIAMS COUNTY, NORTH DAKOTA
KB 2005
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minerals, and porosity. In addition, twenty-nine sandstone samples, corresponding to thin-sections, were analyzed by scanning electron microscope/X-ray microanalysis techniques to aid in the identification of cements and authigenic clay minerals, to assess their distribution in three-dimensional intergranular areas, and to evaluate porosity. Photomicrographs were taken of sandstone thin-sections and scanning electron micrographs were taken of sandstone samples.

RESULTS

General Stratigraphic Characteristics of the Tyler Formation

Descriptions of oil well cores and thin-sections are located in Appendix A. The name and location of oil well logs, Tyler Formation top and bottom picks, formation thicknesses, and sandstone thicknesses are listed in Appendix B. South-north and west-east cross-sections were constructed (Plate 1). The south-north cross-section was constructed to permit correlation and lithologic interpretation from core in southwestern North Dakota. An isopach map, constructed with a computer contouring program created by Dr. R. D. LeFever (1989), illustrating the distribution and thickness of the Tyler Formation is on Plate 2. An isopach map, constructed with the help of the same contouring program, shows the distribution and thickness of Tyler sandstones (Plate 3).

In southwestern North Dakota, Sturm (1982a) divided the Tyler Formation into an upper unit and lower unit based on log character and lithology (Fig. 6A). In northwestern North Dakota, the Tyler Formation is correlative with the lower unit of the Tyler Formation in southwestern North Dakota (Plate 1 A-A'). The Tyler Formation in southwestern North Dakota represents three different sandstone depositional events. The sandstones occur at the base and in the middle of the lower unit and at the base of the upper unit (Fig. 6A). However, in northwestern North Dakota, only two sandstone depositional events are represented. The sandstones occur at the base and within

the Tyler Formation (Fig. 6B). However, the basal sandstone is generally missing and is not present on the well log in Figure 6B.

Thickness of the Tyler Formation

The thickness of the Tyler Formation ranges from zero at its erosional edge to its maximum thickness of 350 feet (107 m) in northern Mountrail County (Plate 2). The variable thickness of the Tyler Formation probably resulted from the paleotopography, independent depocenters which underwent local subsidence, variable depositional environments, differential compaction, or a combination of the above.

Thick basal sandstones correspond to local thickening around the eastern and northeastern part of the study area (Plates 1 B-B', 2, and 3). When some of the basal sandstones were deposited, erosion through the underlying Otter Formation and Kibbey Formation, resulted in a thicker Tyler Formation (Plates 1 B-B', 2, and 3).

A north-south-trending relatively thick region along the Nesson Anticline probably resulted from subsidence in the middle of the Tyler basin (Plates 1 A-A' and 2). However, localized thinning on the Antelope Anticline and the southern portion of the Nesson Anticline indicates that these areas were positive regions during Tyler time (Plates 1 A-A' and 2).

Ziebarth (1972) suggested that thickening toward the limit of the Tyler Formation may be the result of the disappearance of identifiable marker beds in the basal portion of the overlying Amsden Formation. He suggested that this apparent thickening may also be due to facies changes within the basal portion of the Amsden Formation from

carbonates to shales which are identical to those of the underlying Tyler Formation, thus producing a false impression of overthickening of the Tyler Formation in some areas.

Based on very sparse well control, Sturm (1982a, 1982b, 1987) suggested that northwest-southeast linear trends of a relatively thick lower unit in the Tyler Formation in southwestern North Dakota were related to movement of basement-block faults in the Williston Basin. However, in this study linear trends of any orientation were not detected in northwestern North Dakota (Plate 2).

Lithofacies Descriptions of the Tyler Formation

Introduction

As before mentioned, the Tyler Formation in northwestern North Dakota is correlative with the lower unit of the Tyler Formation in southwestern North Dakota (Plate 1 A-A'). For completeness, the lithofacies in the upper unit will be described. In northwestern North Dakota, the Tyler Formation varies both in color and lithologically and consists of four major lithofacies. The four lithofacies are neither restricted to a certain stratigraphic position, nor always present. The four lithofacies, identified by letters and their most prominent lithologies are: 1) Lithofacies A, varicolored mudstone; 2) Lithofacies B, medium-gray to medium-dark-gray claystone and bituminous coal; 3) Lithofacies C, dark-gray to black shale; and 4) Lithofacies D, gray and brown sandstone. However, in southwestern North Dakota a fifth lithofacies, E, consisting of grayish-red sandstone, is present in the lower unit of the Tyler Formation.

The upper unit may be divided into two subunits based on log character and lithology (Fig. 6A). Three distinct major lithofacies have been recognized in the upper unit. These lithofacies are restricted to stratigraphic position (Fig. 6A). The three lithofacies, identified by letters, and their most prominent lithologies are: 1) Lithofacies F, gray and brown sandstone developed at the base of the lower subunit; 2) Lithofacies G, medium-dark-gray to dark-gray limestone and dark-gray to black shale, constituting the remainder of the lower subunit; and 3) Lithofacies H, varicolored mudstone, comprising the upper subunit.

The sandstones in the Tyler Formation consist of 97-100% quartz. In addition, the sandstones contain approximately 1-2% feldspar and 1-2% sedimentary rock fragments. The sedimentary rock fragments consist of mud and chert. All of the sandstones are classified as quartzarenite according to Folk's (1974) classification. The limestones in the Tyler Formation are primarily lime mudstone. Ostracods are the most abundant fossil in the Tyler Formation and are commonly concentrated as laminae.

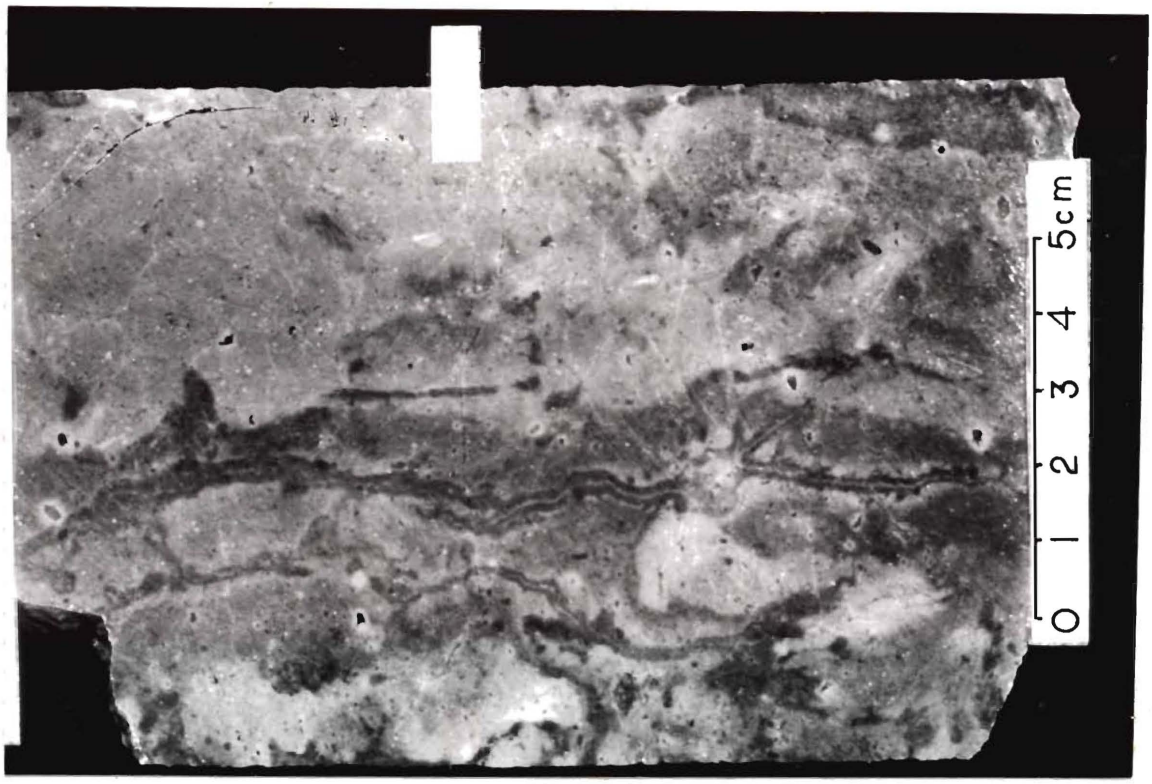
Lithofacies A

Lithofacies A is composed of varicolored, calcareous mudstone. Colors are primarily shades of red, green, gray, and yellow, and are often mottled. Primary sedimentary structures have been destroyed by post-depositional processes, which probably consisted of deformation solution brecciation, compaction dewatering, and desiccation (Fig. 7). Root traces (Fig. 8) and randomly oriented compaction slickensides

Figure 7 - Core photograph of mottled, brecciated mudstone (Lithofacies A). Fabric probably resulted from deformation solution brecciation, compaction dewatering, and desiccation. NDGS# 5525 - 7,984 ft.

Figure 8 - Core photograph of root traces in mottled mudstone (Lithofacies A). NDGS# 5372 - 8,004 ft.


Dickinson Unit #50
NW NE Sec. 21, T.140N., R.96W.
Stark County, North Dakota
0 1 2 3 4 5cm


0 1 2 3 4 5cm

occur throughout this lithofacies. Ostracods are rare in this lithofacies.

Light-colored calcareous nodules, usually less than 4 cm in diameter (Fig. 9), occur in horizons less than 5 feet (1.5 m) thick throughout this lithofacies. The calcareous nodules have increased the degree of induration of this lithofacies. Conglomerates composed of lime pebbles in mud matrix (Fig. 10), usually less than 12 inches (30.5 cm) thick, and associated with slickensides, occur throughout this lithofacies.

Lithofacies B

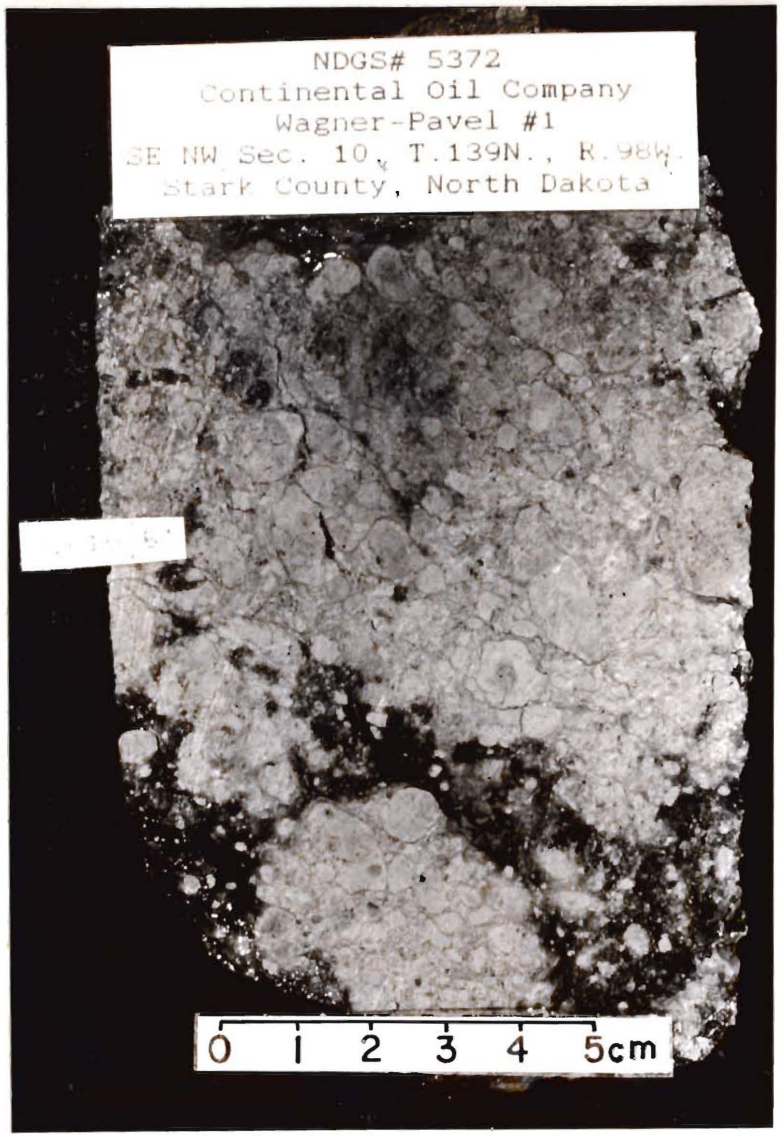
Lithofacies B consists of two lithologically different, but genetically related lithologies. Medium-gray to medium-dark-gray, calcareous, pyritic, carbonaceous claystone (Fig. 11) is overlain by relatively thin bituminous coal (Fig. 12) or very carbonaceous, coaly shale. Calcareous nodules, usually less than 1.5 cm in diameter, occur in the upper part of the claystone (Fig. 11). Carbonized plant fragments occur abundantly on bedding planes of the coal and shale and throughout the claystone. Root traces (Fig. 11) and randomly oriented compaction slickensides occur throughout the claystone. Maximum thickness of the coal is 6 inches (15 cm), and the maximum combined thickness of coal and underlying claystone is commonly 5 feet (1.5 m). This lithofacies is most commonly underlain by lithofacies A and overlain by lithofacies C.

Lithofacies C

Lithofacies C is composed of dark-gray to black, noncalcareous to calcareous, carbonaceous shale (Fig. 13) and minor amounts of medium-

Figure 9 - Core photograph of light-colored, calcareous nodules in mottled mudstone (Lithofacies A). NDGS# 4524 - 8,050 ft.

Figure 10 - Core photograph of mottled conglomerate composed of lime pebbles in mud matrix (Lithofacies A).
NDGS# 5372 - 8,016.5 ft.


NDGS# 5372
Continental Oil Company
Wagner-Pavel #1
SE NW Sec. 10, T.139N., R.98W.
Stark County, North Dakota
0 1 2 3 4 5cm

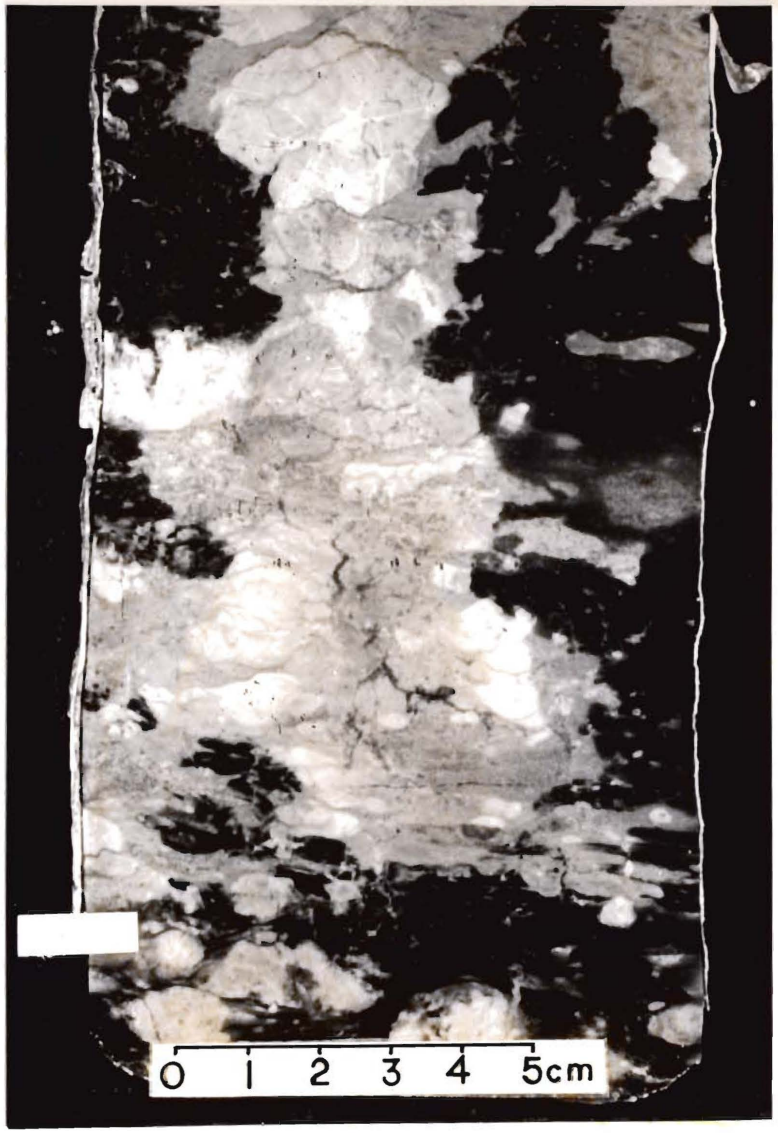
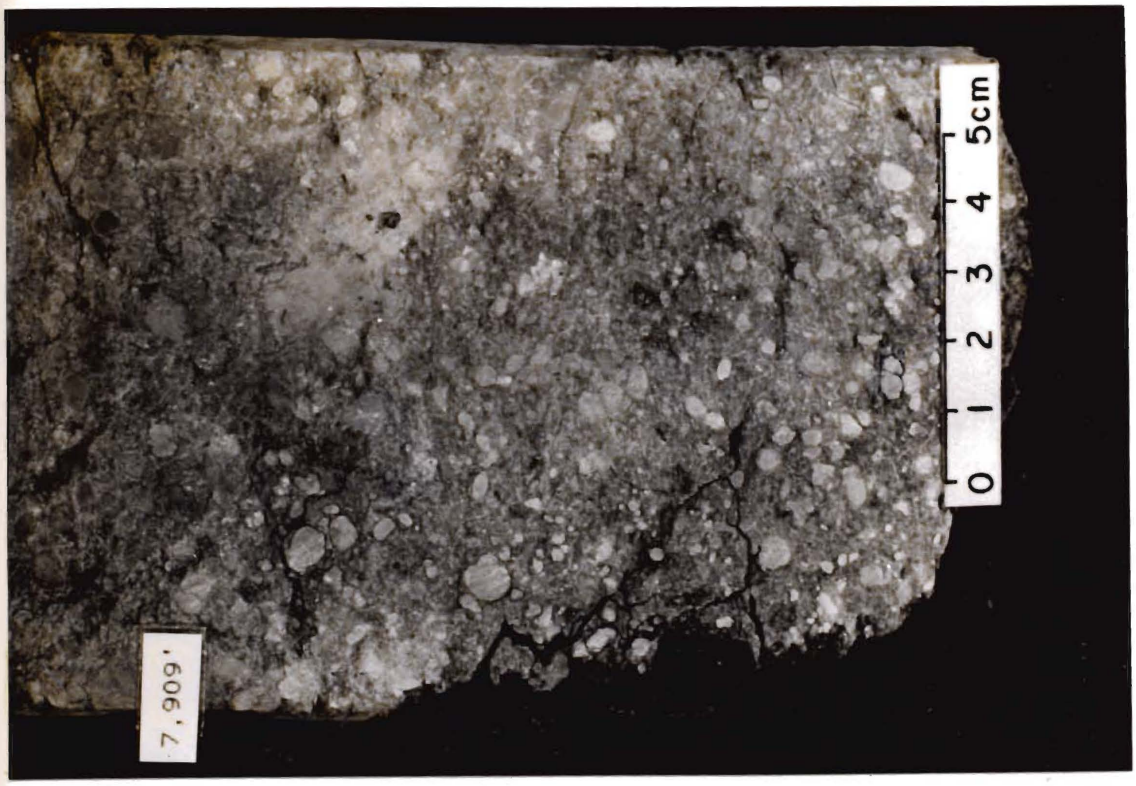

0 1 2 3 4 5cm

Figure 11 - Core photograph of medium-gray to medium-dark-gray, carbonaceous claystone (Lithofacies B). Note calcareous nodules. NDGS# 6015 - 7,909 ft.

Figure 12 - Core photograph of bituminous coal (Lithofacies B). NDGS# 6015 - 7,908 ft.


7,909
0 1 2 3 4 5cm

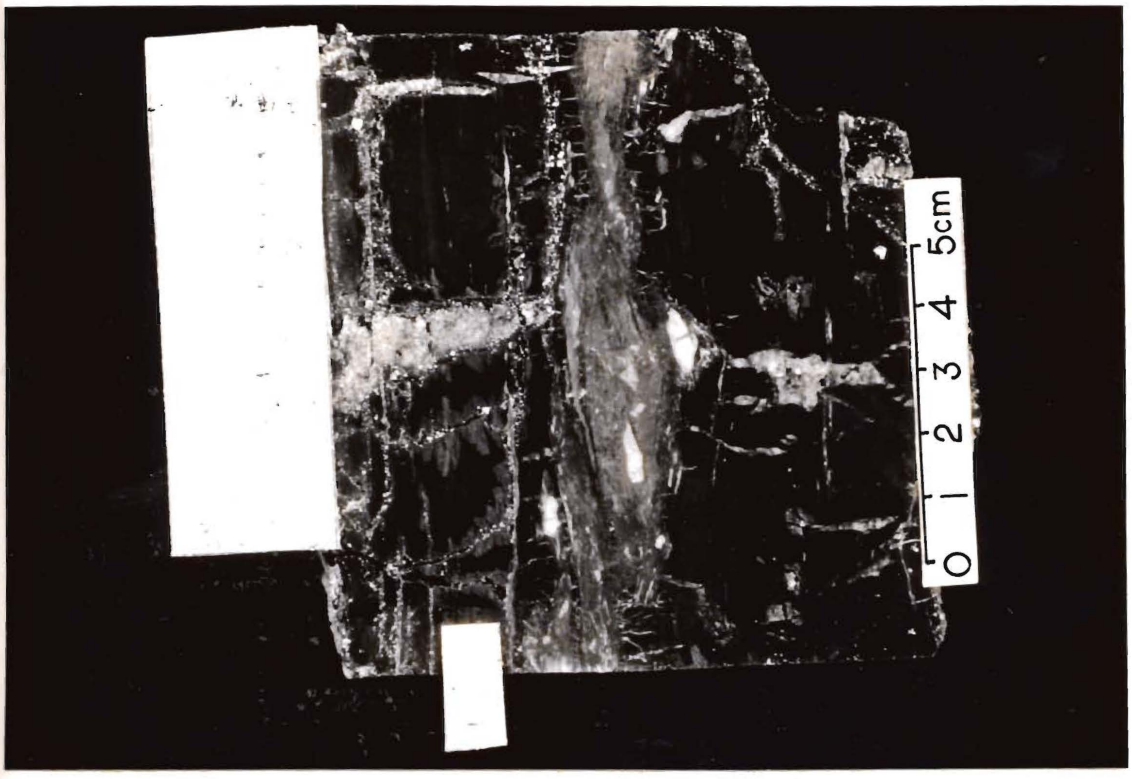
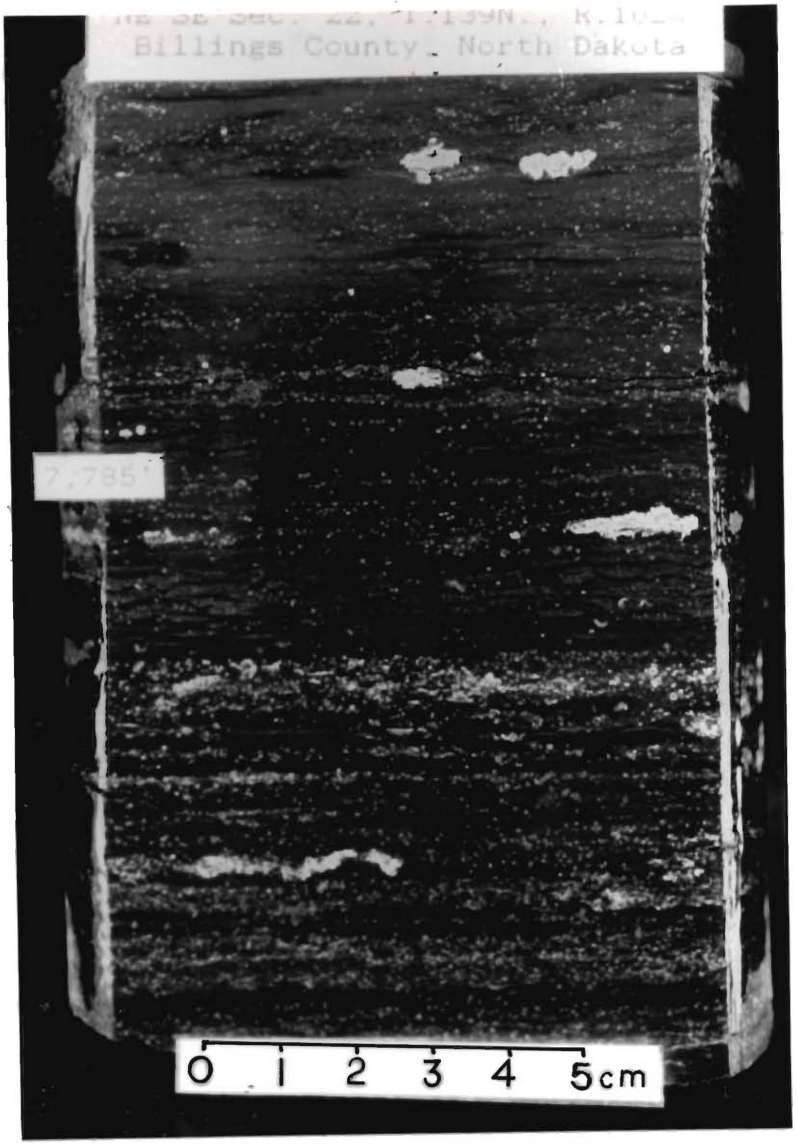

0 1 2 3 4 5cm

Figure 13 - Core photograph of dark-gray to black, carbonaceous shale (Lithofacies C). Note pyrite lenses and nodules. NDGS# 3921 - 7,785 ft.


Billings County, North Dakota
7,785'
0 1 2 3 4 5cm

dark-gray to dark-gray, argillaceous, lime mudstone and skeletal wackestone (Fig. 14). Shales and limestones are commonly even- to wavy-parallel and wavy-nonparallel laminated. Disseminated pyrite and pyrite nodules and lenses occur throughout this lithofacies (Fig. 13). Well preserved ostracod, pelecypod, and brachiopod shells, and carbonized plant fragments occur abundantly on bedding planes of the shale.

Lithofacies D

Lithofacies D is composed of gray and brown, medium- to coarse-grained, poorly to moderately sorted, texturally immature, quartzarenite. This sandstone commonly occurs in multiply-stacked, fining-upward planar (Fig. 15) and small-scale trough (Fig. 16) crossbedded sets. Conglomerates composed of mud and coal pebbles (Fig. 17) occur at the base of this sandstone. Lenticular mud pebbles aligned parallel to bedding planes occur throughout this sandstone (Fig. 18). This lithofacies is interbedded with and underlain and overlain by lithofacies C.

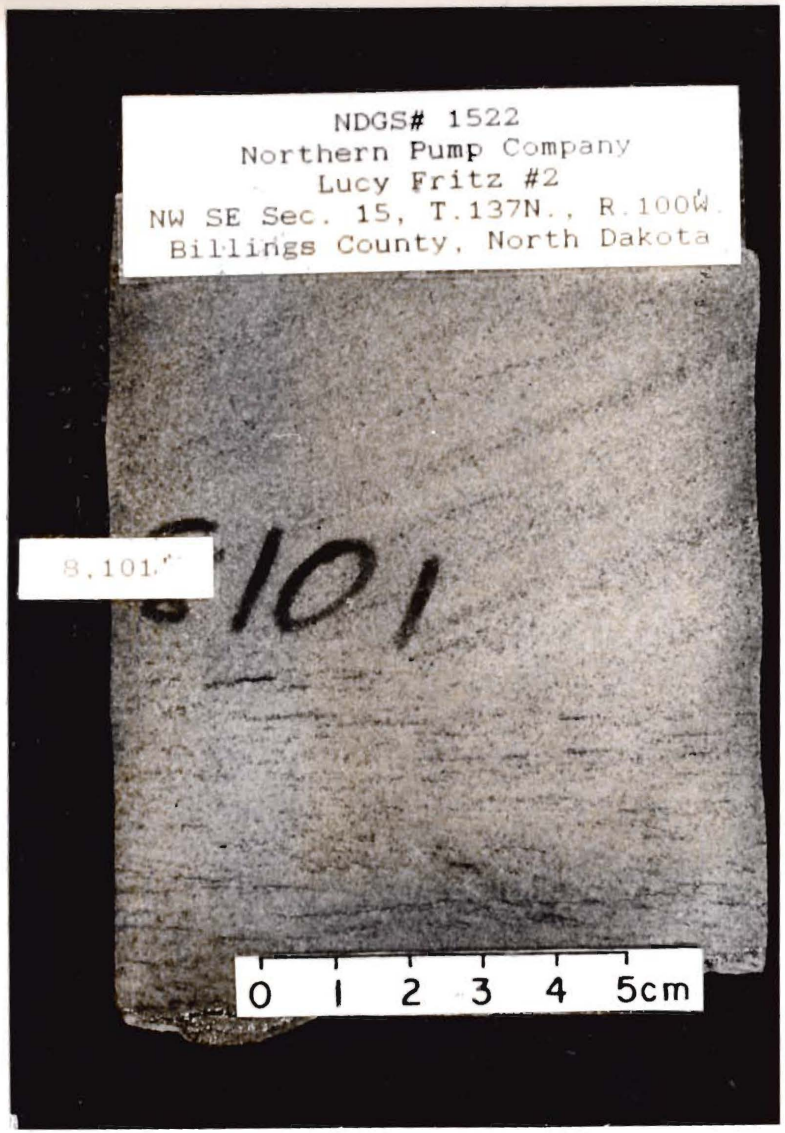
This sandstone occurs in the middle and rarely at the base of the formation (Fig. 6B). This sandstone averages 25 feet (8 m) thick and reaches a thickness of 80 feet (24 m) in northern Mountrail County (Plate 3). This sandstone occurs as narrow, lenticular bodies in primarily northeast-southwest linear trends in northwestern North Dakota (Plate 3).

Lithofacies E

Lithofacies E is composed of very light-gray and grayish-red, very fine- to coarse-grained, poorly to moderately sorted,

Figure 14 - Core photograph of medium-dark-gray to dark-gray, argillaceous, skeletal wackestone (Lithofacies C). NDGS# 4025 - 7,626 ft.

Figure 15 - Core photograph of planar crossbedded sandstone (Lithofacies D). NDGS# 1522 - 8,101 ft.


NDGS# 1522
Northern Pump Company
Lucy Fritz #2
NW SE Sec. 15, T.137N., R.100W.
Billings County, North Dakota
8,101'
8101
0 1 2 3 4 5cm

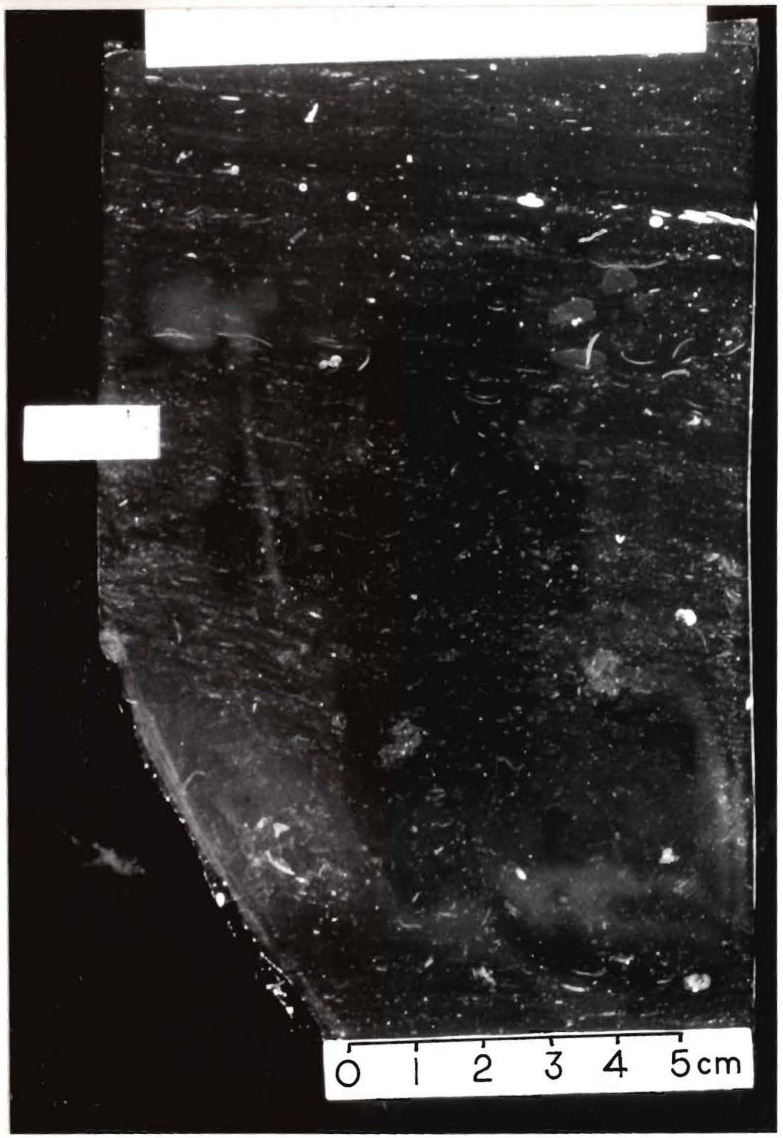
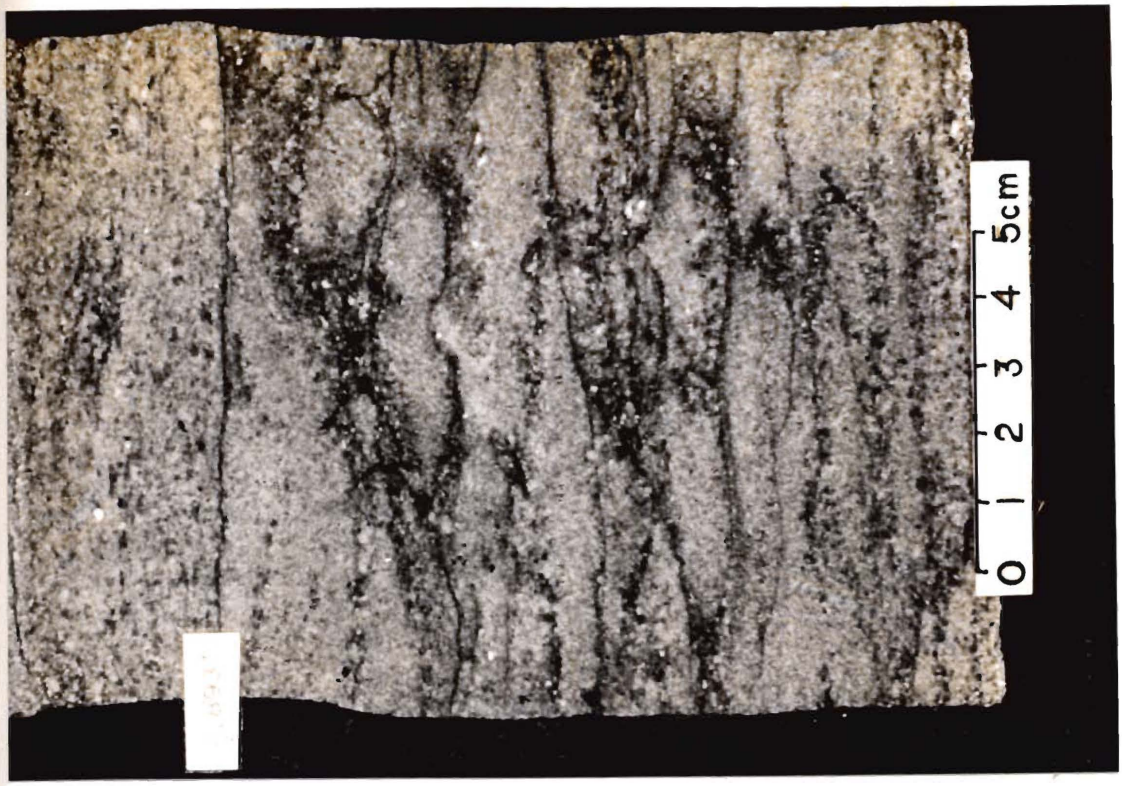

0 1 2 3 4 5cm

Figure 16 - Core photograph of small-scale, trough crossbedded sandstone (Lithofacies D). NDGS# 6015 - 7,893 ft.

Figure 17 - Core photograph of conglomerate composed of mud and coal pebbles in sand matrix (Lithofacies D).
NDGS# 3896 - 8,101 ft.


0 1 2 3 4 5cm

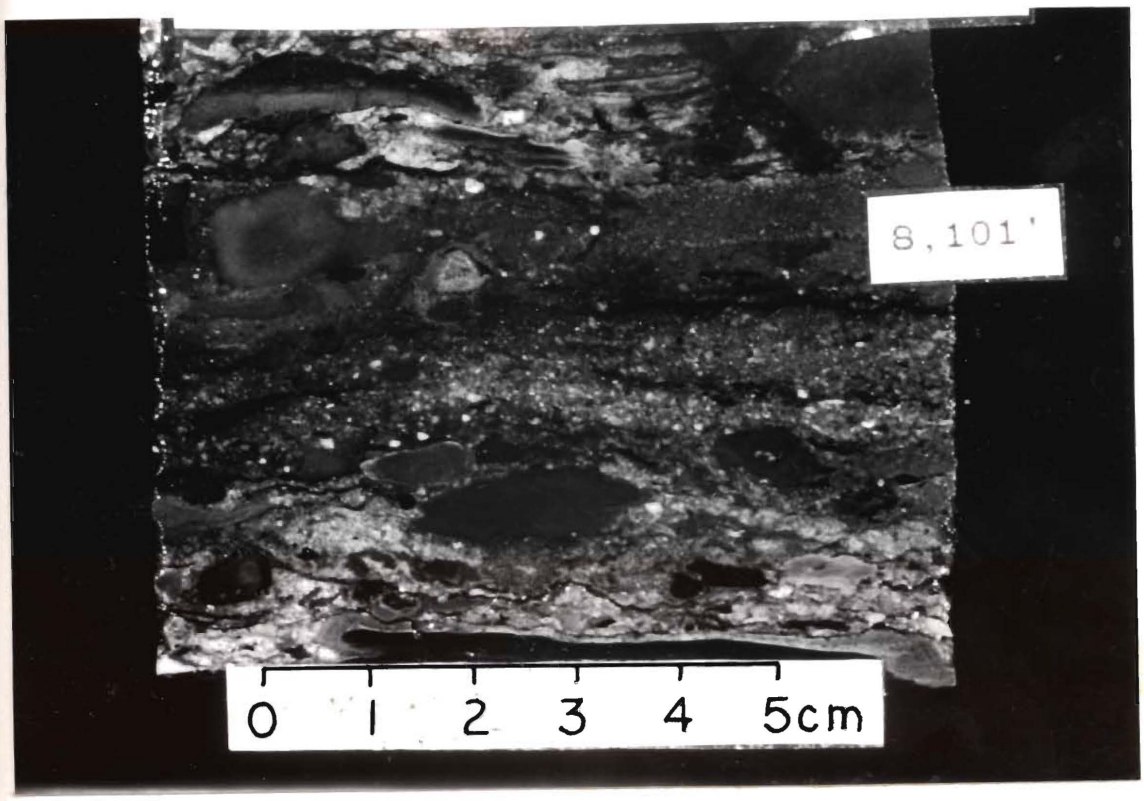
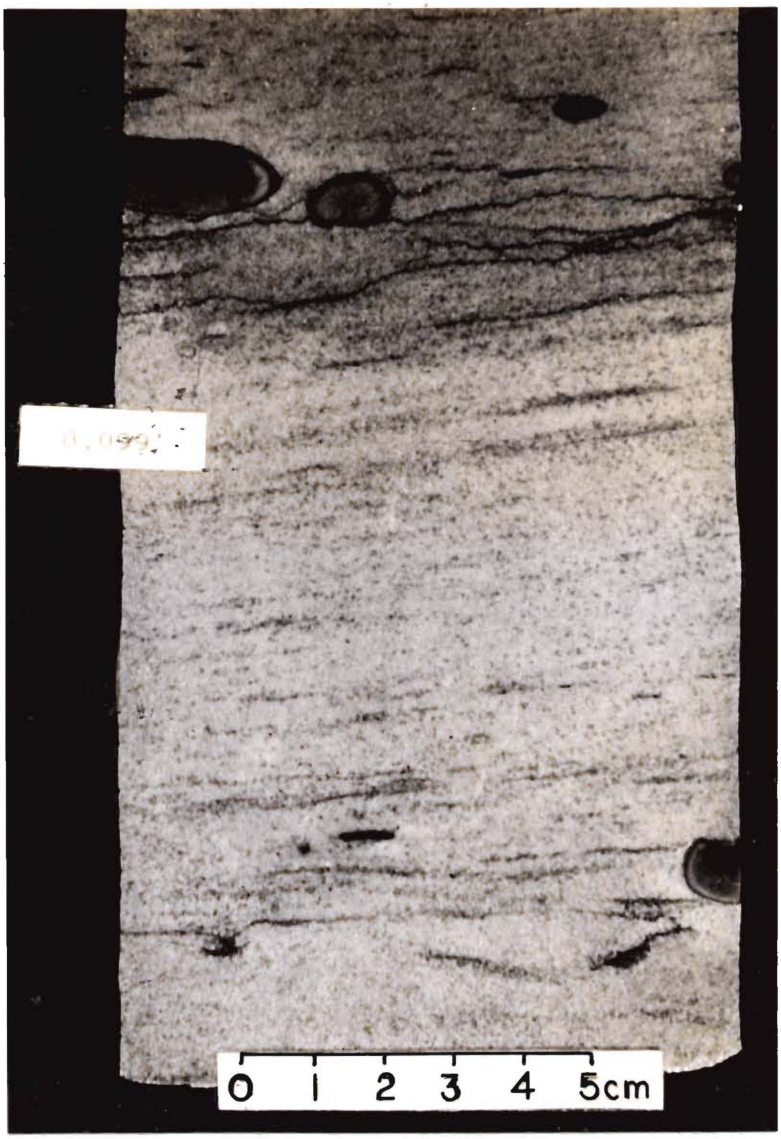

8,101'
0 1 2 3 4 5cm

Figure 18 - Core photograph of lenticular mud pebbles aligned parallel to bedding planes in sandstone (Lithofacies D). NDGS# 1522 - 8,099 ft.


0 1 2 3 4 5cm

quartzarenite. Quartz grains are subrounded to well-rounded. This sandstone is primarily massively bedded to mottled (Fig. 19) and contains minor amounts of planar crossbedded sets. Ostracods are abundant in this sandstone. This lithofacies is underlain and overlain by lithofacies A.

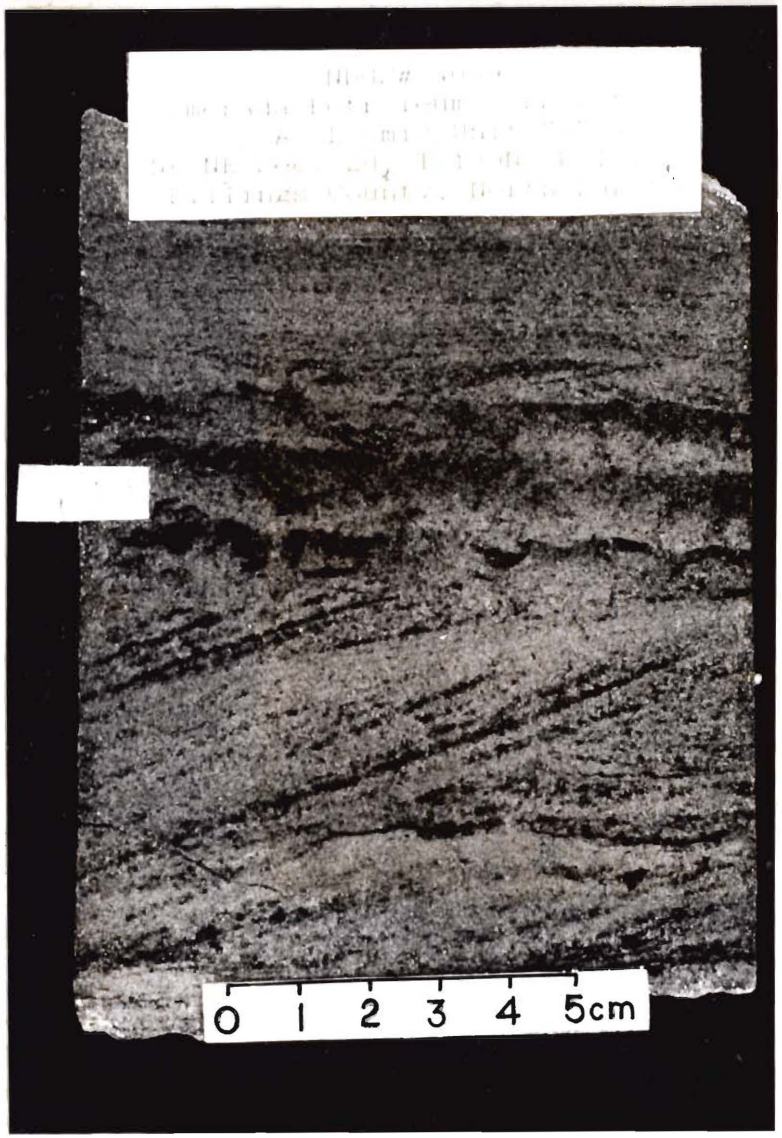
Sturm (1982a, 1982b, 1987) characterized this sandstone as thin (less than 10 feet) (3 m), discontinuous, lenticular bodies in a west-east trend in southwestern North Dakota. The presence of this lithofacies can not be confirmed in northwestern North Dakota because of the lack of core and its relatively thin and lenticular character in southwestern North Dakota, where it occurs in core.

Lithofacies F

Lithofacies F is composed of gray and brown, fine- to medium-grained, well-sorted, quartzarenite. This sandstone is primarily massively bedded with interbedded carbonaceous shale laminae. Other sedimentary structures include planar (Fig. 20) and herringbone (Fig. 21) crossbedded sets, and ripple cross-laminae. This sandstone commonly contains pyritized root traces (Fig. 22) with quartz sand wackestone (Fig. 23) developed at the top. Ostracods, pelecypods, and brachiopods are rare in this sandstone. Ziebarth (1962, 1964), Land (1976, 1979), and Sturm (1982a, 1982b, 1983, 1987) characterized this lithofacies as isolated, lenticular sandstone bodies associated with the boundaries of the Medora, Fryburg, Green River, Zenith, South Heart, and Dickinson oil fields, Billings and Stark Counties, southwestern North Dakota. In each oil field, the sandstone body thins to a feather edge close to the field boundary and thickens to

Figure 19 - Core photograph of massively bedded to mottled sandstone (Lithofacies E). NDGS# 4741 - 7,910 ft.

Figure 20 - Core photograph of planar crossbedded sandstone (Lithofacies F). NDGS# 4009 - 7,890 ft.


0 1 2 3 4 5cm

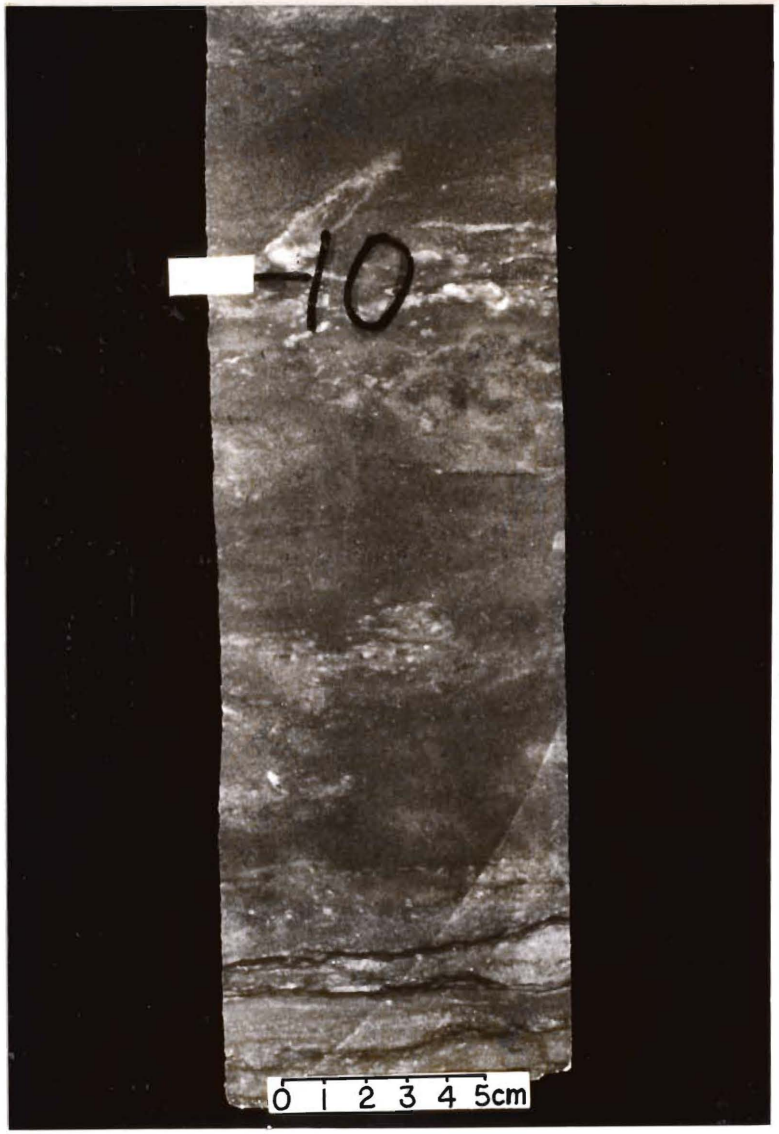

10
0 1 2 3 4 5cm

Figure 21 - Core photograph of herringbone crossbedded sandstone (Lithofacies F). NDGS# 5473 - 8,060.8 ft.

Figure 22 - Core photograph of pyritized root traces in sandstone (Lithofacies F). NDGS# 5443 - 8,123 ft.


8,123'
0 1 2 3 4 5cm

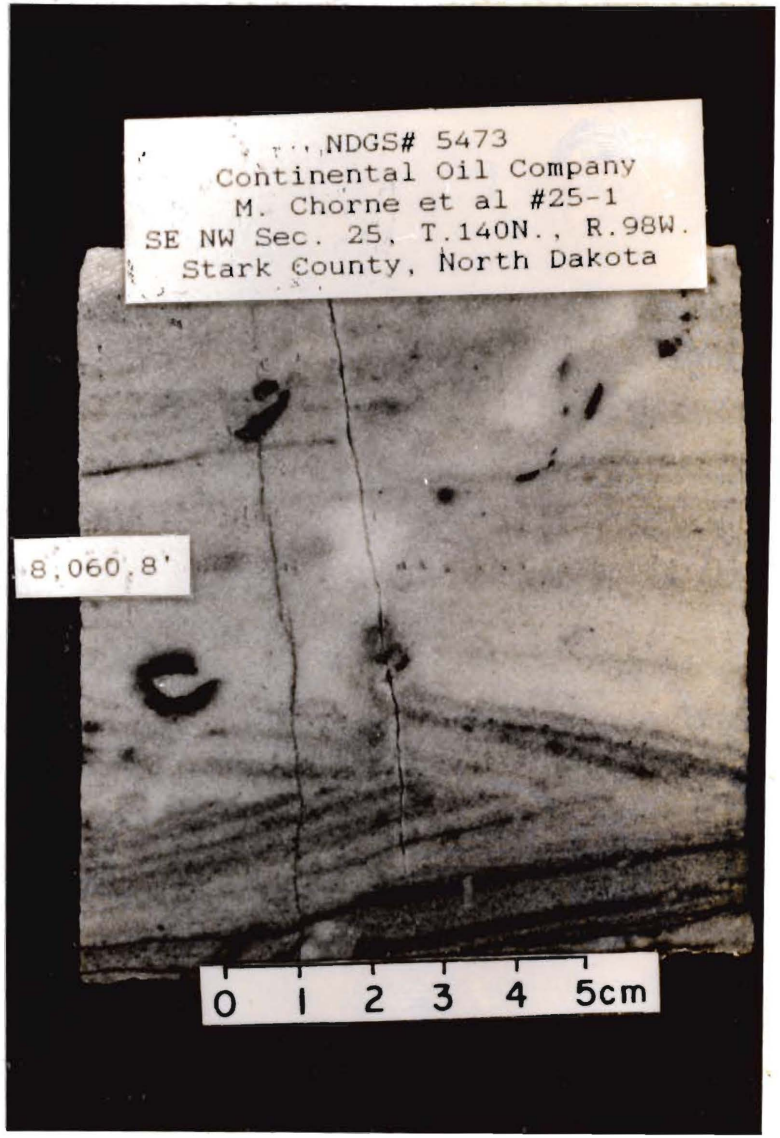
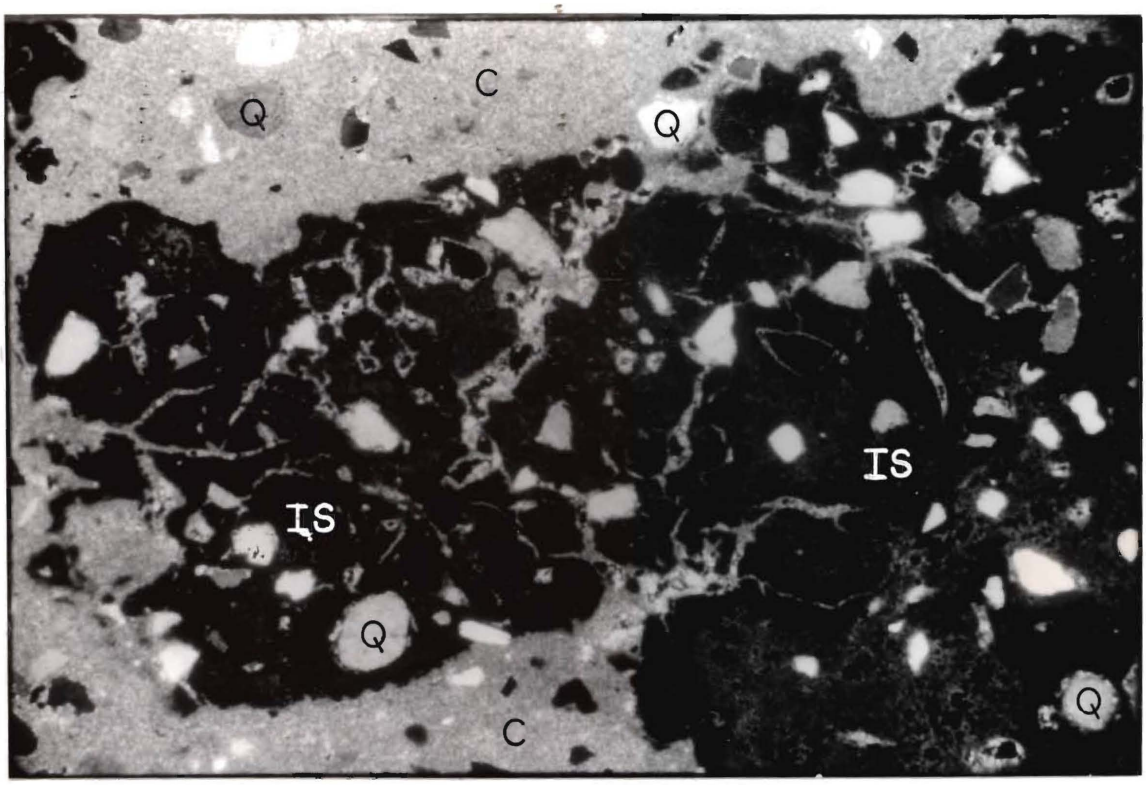

NDGS# 5473
Continental Oil Company
M. Chorne et al #25-1
SE NW Sec. 25, T.140N., R.98W.
Stark County, North Dakota
8,060.8'
0 1 2 3 4 5cm

Figure 23 - Photomicrograph of quartz sand wackestone (Lithofacies F). Note desiccation cracks in dark-colored iron sulfide. C=Calcite, IS=Iron Sulfide, Q=Quartz. NDGS# 10688 - 8,192.5 ft. Field of view is 4.0 mm.


Q
C
Q
IS
IS
Q
C
Q

approximately 20 feet (6 m) toward the center of the field (Ziebarth, 1962, 1964; Land, 1976, 1979; Sturm, 1982a, 1982b, 1983, 1987).

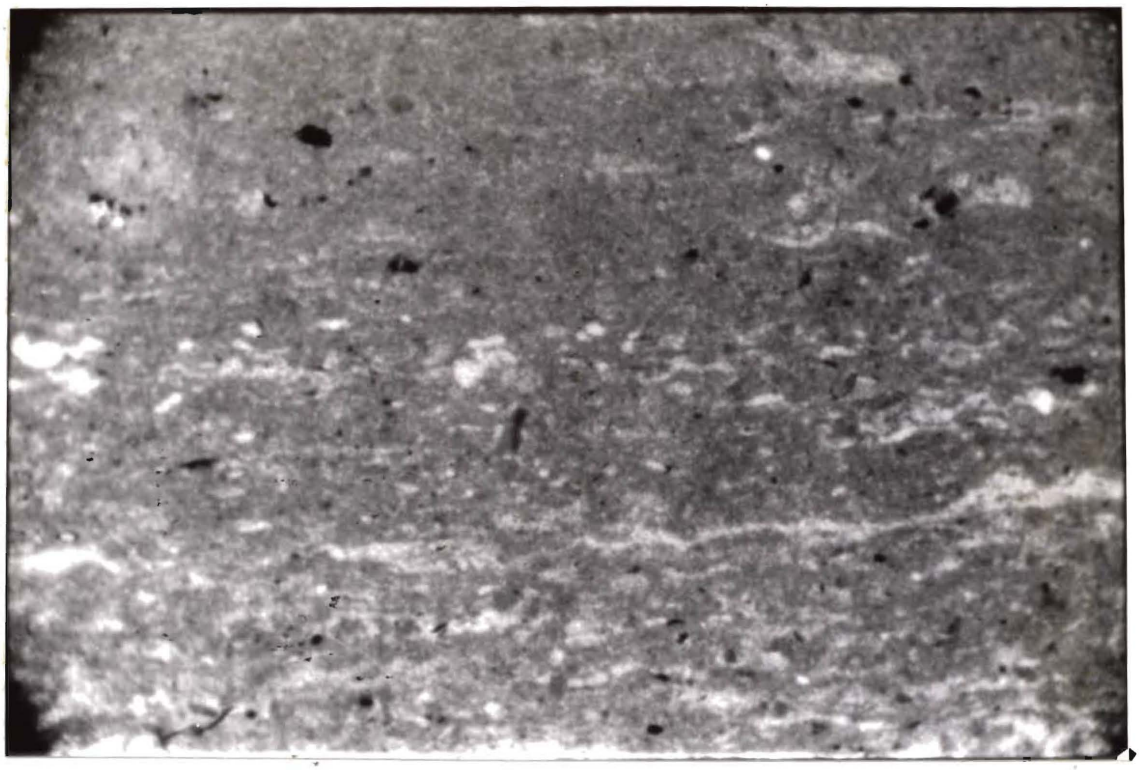
Lithofacies G

Lithofacies G is characterized by interlaminated to interbedded, medium-dark-gray to dark-gray, argillaceous limestone and dark-gray to black, calcareous, carbonaceous shale. Limestone depositional textures include lime mudstone (Fig. 24), ostracod-peloidal lime mudstone, wackestone, and packstone (Fig. 25), skeletal (ostracod, pelecypod, and brachiopod)-peloidal wackestone and packstone (Fig. 26), oncolitic-ostracod-pelecypod-peloidal wackestone and packstone (Fig. 27), and algal grainstone/boundstone (Fig. 28). Conglomeratic limestones composed of lime pebbles in lime matrix and 5-10 cm thick horizons of matrix-supported "shell hash" occur throughout this lithofacies. Well preserved ostracod, pelecypod, and brachiopod shells occur abundantly on bedding planes of the shale.

Various sedimentary structures occur throughout this lithofacies. Locally, this lithofacies contains small-scale, low-angle crossbedded skeletal-peloidal packstone (Fig. 29). An undulating bedding feature is produced by the presence of medium-dark-gray to dark-gray, imbricated, lenticular, lime mudstone clasts embedded in dark-gray to black shale, with white anhydrite in voids (Fig. 30). Desiccation features and root traces occur in lime mudstone (Fig. 31). Limestones and shales are commonly even- to wavy-parallel and wavy-nonparallel laminated.

Figure 24 - Photomicrograph of lime mudstone (Lithofacies G). NDGS# 5805 - 8,125.3 ft. Field of view is 2.5 mm.

Figure 25 - Photomicrograph of ostracod-peloidal wackestone (Lithofacies G). NDGS# 5805 - 8,131 ft. Field of view is 2.5 mm.



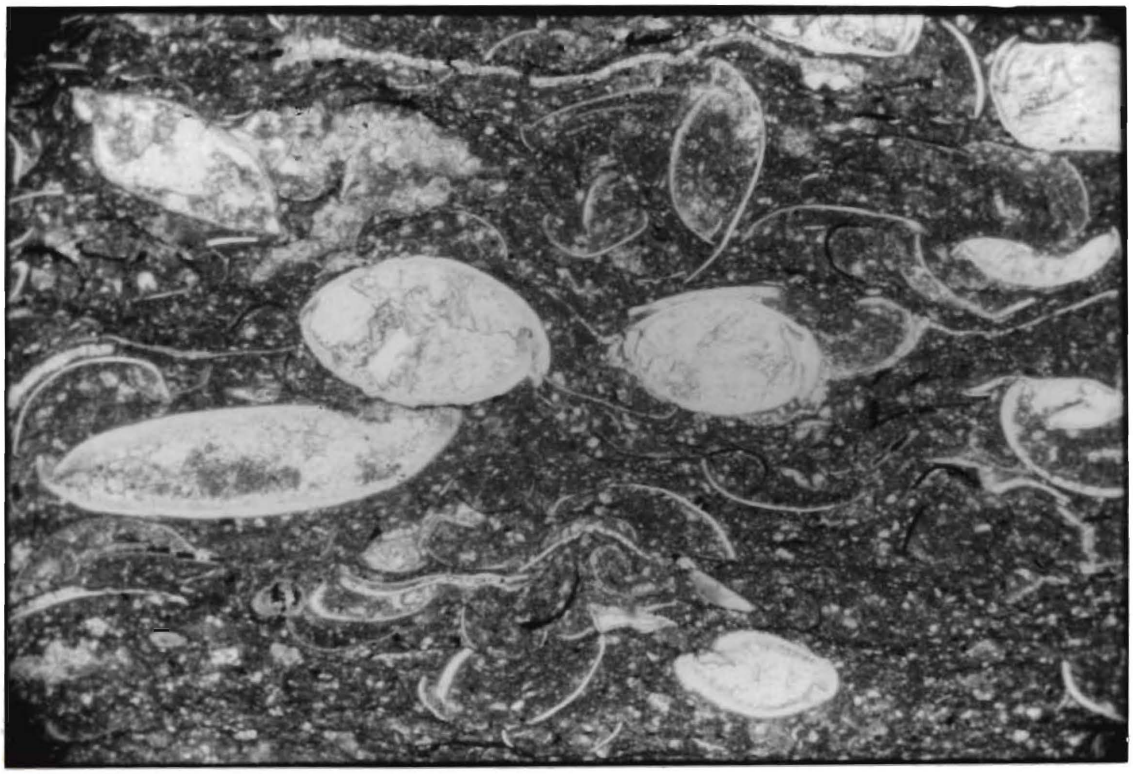


Figure 26 - Photomicrograph of skeletal (ostracod, pelecypod, brachiopod)-peloidal packstone (Lithofacies G). NDGS# 5805 - 8,123 ft. Field of view is 4.0 mm.

Figure 27 - Photomicrograph of oncolite-ostracod-pelecypod-peloidal packstone (Lithofacies G). NDGS# 10688 - 8,186.5 ft. Field of view is 4.0 mm.

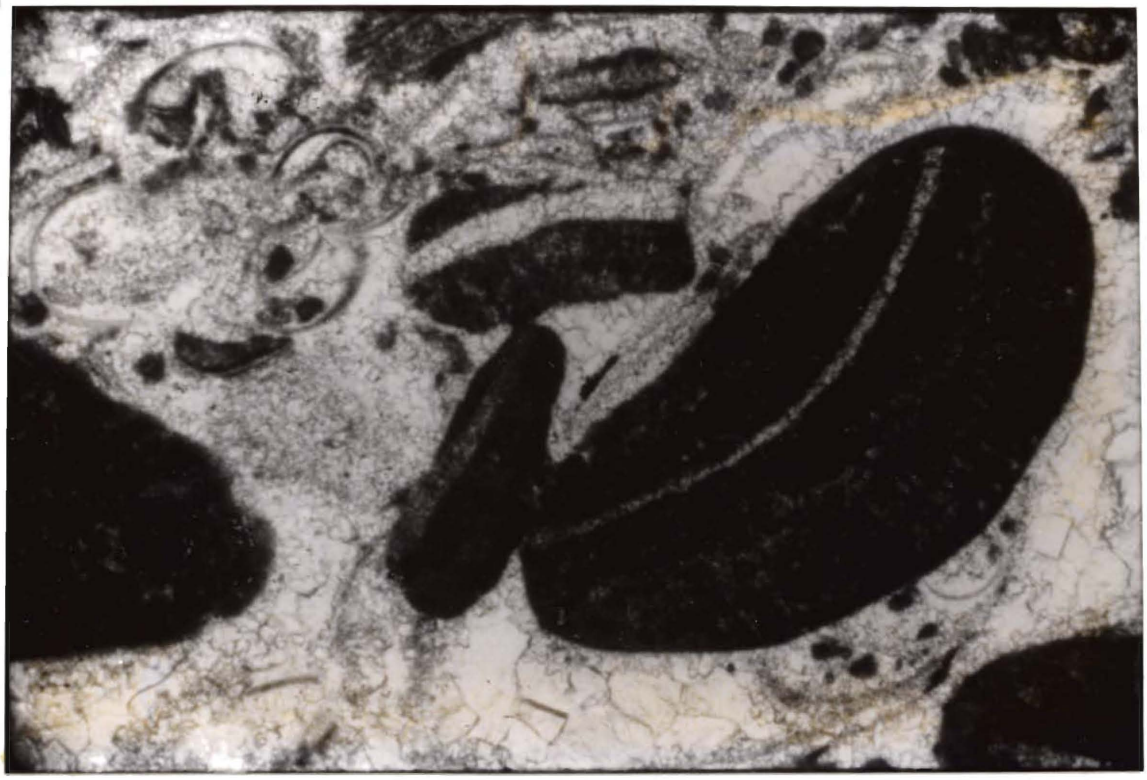
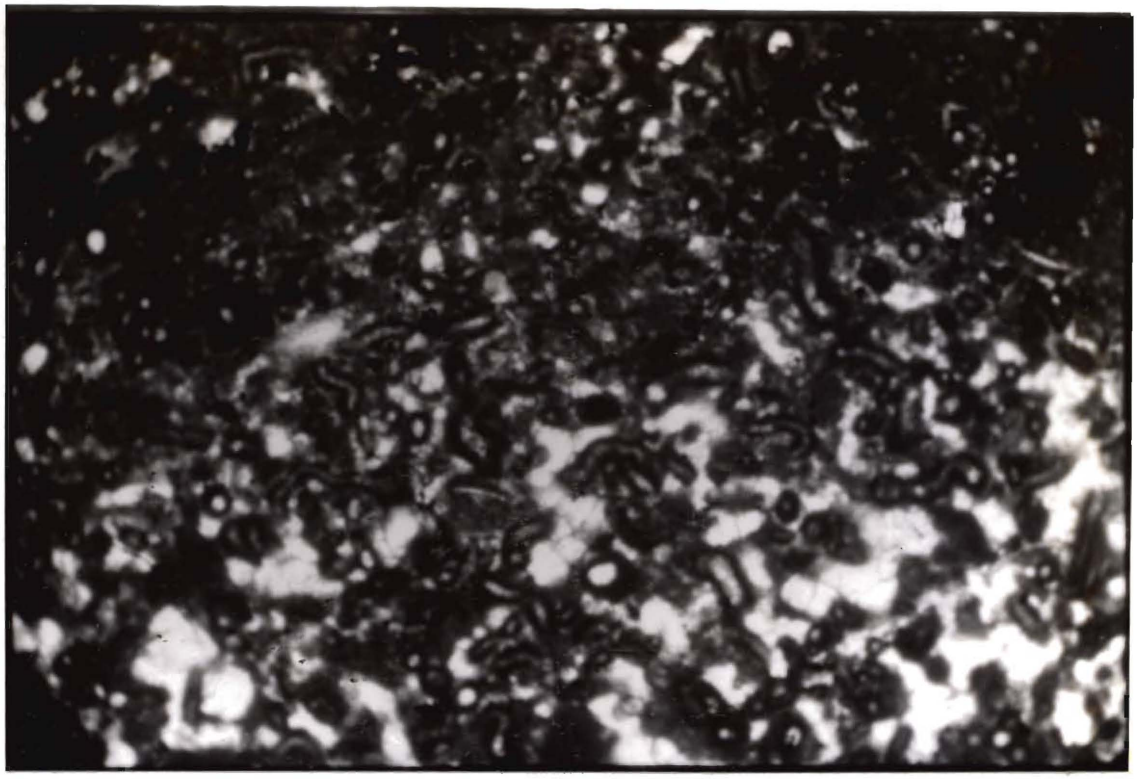


Figure 28 - Photomicrograph of algal grainstone/boundstone (Lithofacies G). NDGS# 5805 - 8,116.9 ft. Field of view is 2.5 mm.

Figure 29 - Core photograph of medium-dark-gray to dark-gray, small-scale, low-angle crossbedded skeletal packstone (Lithofacies G). NDGS# 5371 - 7,955.8 ft.



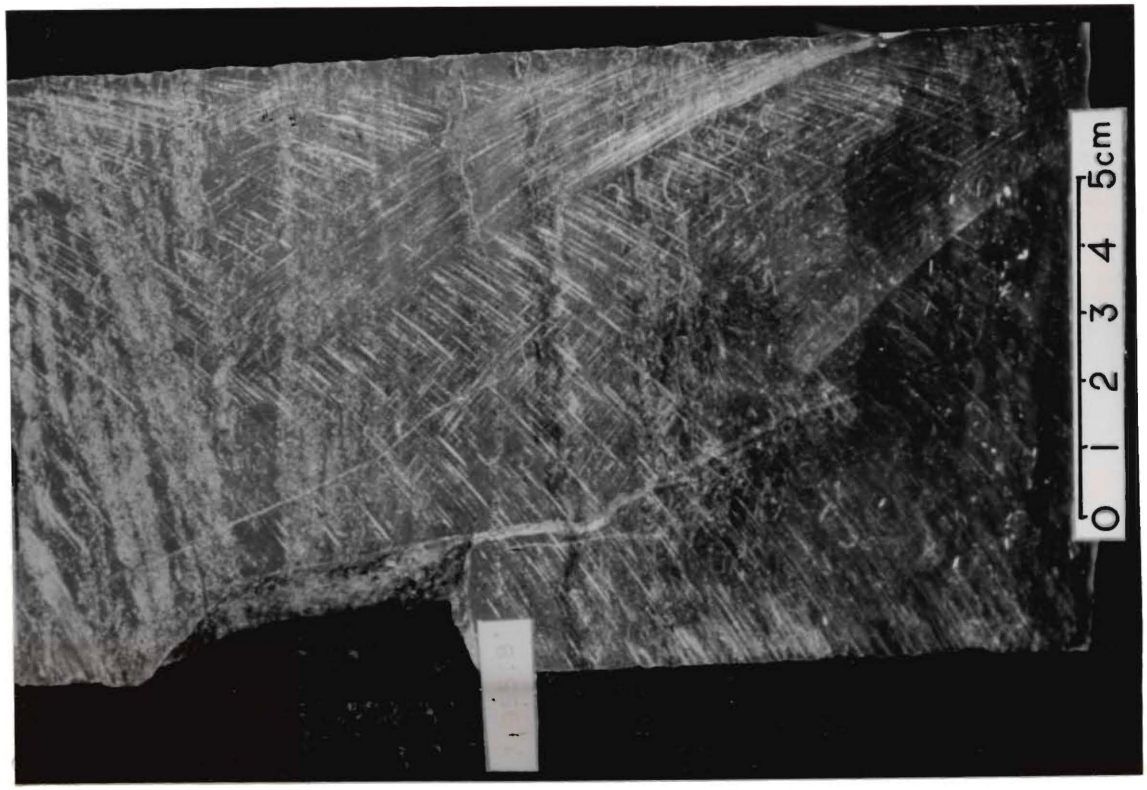

0 1 2 3 4 5cm

Figure 30 - Core photograph of an undulating bedding feature. Feature is produced by medium-dark-gray to dark-gray, imbricated, lenticular, lime mudstone clasts embedded in dark-gray to black shale, with white anhydrite in voids (Lithofacies G). NDGS# 5434 - 7,918 ft.

Figure 31 - Core photograph of desiccation features and root traces in medium-dark-gray lime mudstone (Lithofacies G). NDGS# 4229 - 8,213.5 ft.


0 1 2 3 4 5cm


0 1 2 3 4 5cm

Lithofacies H

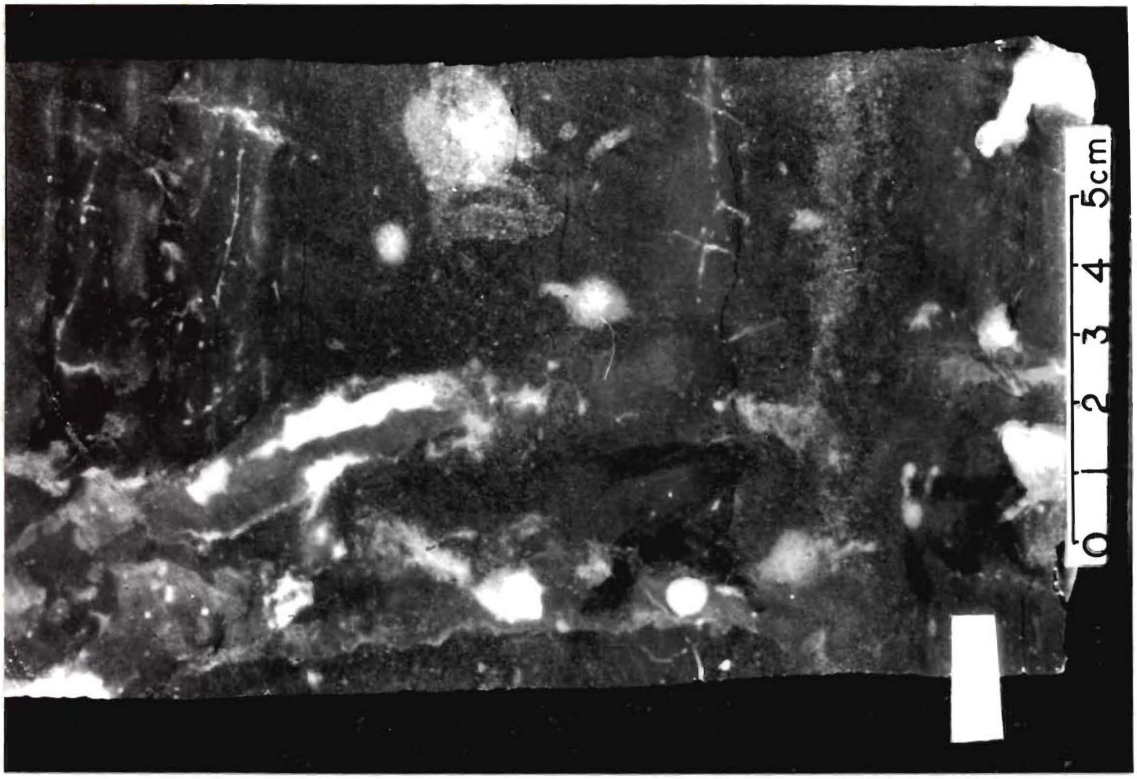
Lithofacies H consists of varicolored, silty to sandy, calcareous to dolomitic to anhydritic mudstone and siltstone, and grayish-red, fine-grained quartzarenite. The color of the mudstone and siltstone is primarily shades of red, green, gray, and yellow, and are often mottled. Primary sedimentary structures include contorted siltstone beds, which probably resulted from bioturbation or differential compaction (Fig. 32). Root traces (Fig. 33) and randomly oriented compaction slickensides occur throughout the mudstone. Some primary sedimentary structures in the mudstone have been destroyed by post-depositional processes, which probably consisted of deformation solution brecciation, compaction dewatering, and desiccation (Fig. 34). The sandstones are commonly less than 12 inches (30.5 cm) thick and are massively bedded to ripple cross-laminated (Fig. 35).

Light-colored calcareous to dolomitic nodules, usually less than 5 cm in diameter (Fig. 36), occur in horizons less than 3 feet (91 cm) thick throughout the mudstone. The calcareous to dolomitic nodules have increased the degree of induration of the mudstone. Conglomerates composed of lime pebbles in mud matrix (Fig. 37), usually less than 12 inches (30.5 cm) thick, and associated with slickensides, occur throughout the mudstone. Moderate-orange-pink nodular anhydrite occurs throughout the mudstone (Fig. 38). Ostracods are rare in this lithofacies.

The lithologic character of Lithofacies H is very similar to Lithofacies A. Lithofacies H may be present in northwestern North Dakota, although the absence of Lithofacies F and Lithofacies G in

Figure 32 - Core photograph of contorted siltstone beds in mottled mudstone (Lithofacies H). Contorted siltstone beds probably resulted from bioturbation or differential compaction. NDGS# 5371 - 7,931 ft.

Figure 33 - Core photograph of root traces in mottled mudstone (Lithofacies H). NDGS# 5372 - 7,942 ft.


0 1 2 3 4 5cm

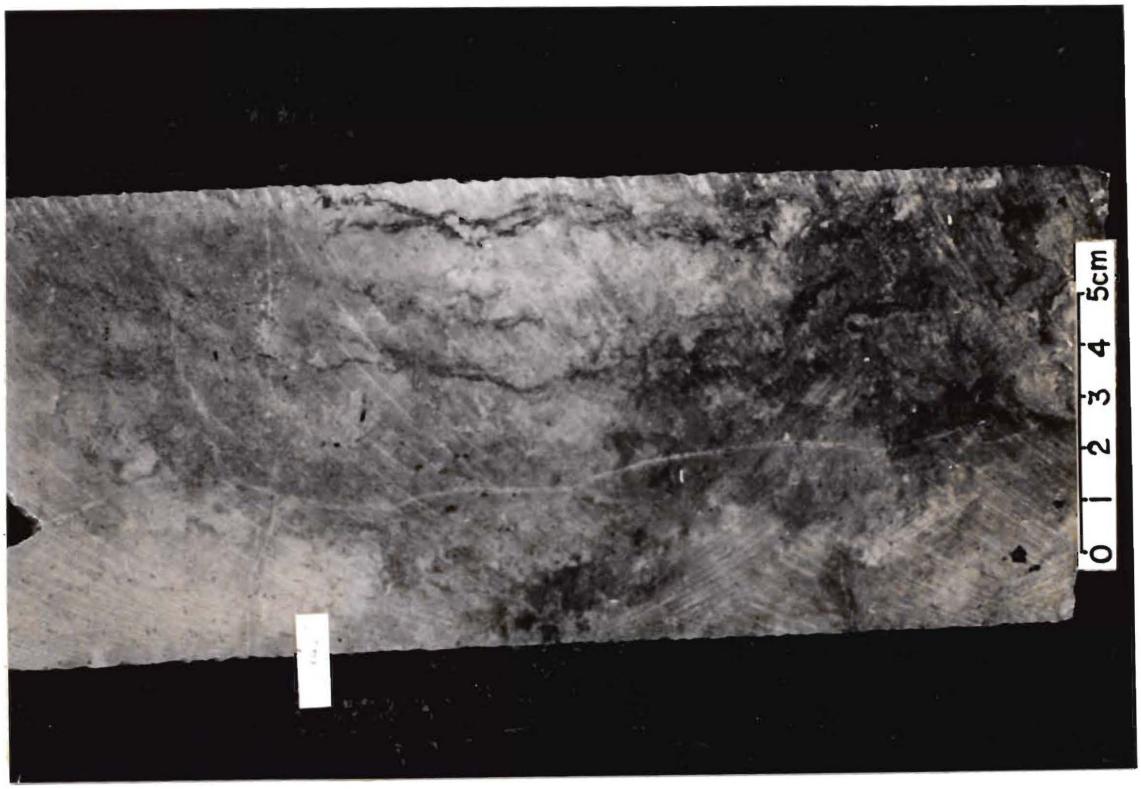
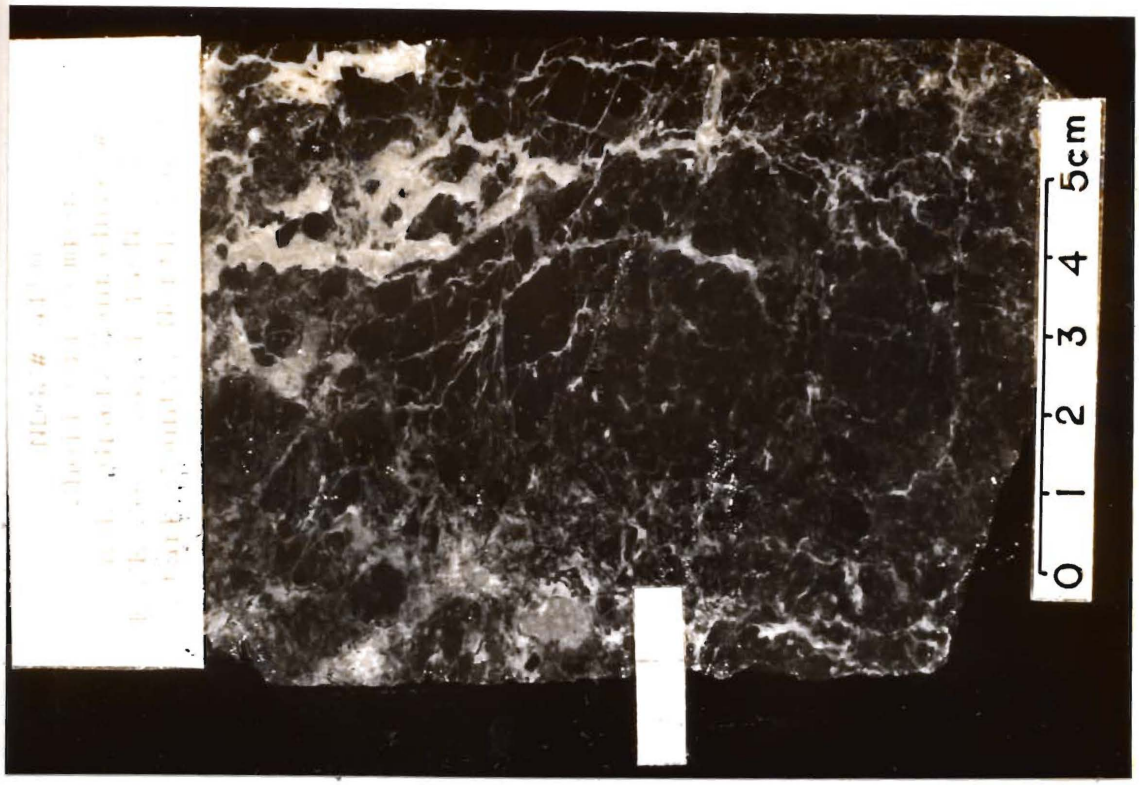

0 1 2 3 4 5cm

Figure 34 - Core photograph of mottled, brecciated mudstone (Lithofacies H). Fabric probably resulted from deformation solution brecciation, compaction dewatering, and desiccation. NDGS# 4150 - 7,872.5 ft.

Figure 35 - Core photograph of ripple cross-laminated sandstone (Lithofacies H). NDGS# 5371 - 7,929 ft.


0 1 2 3 4 5cm

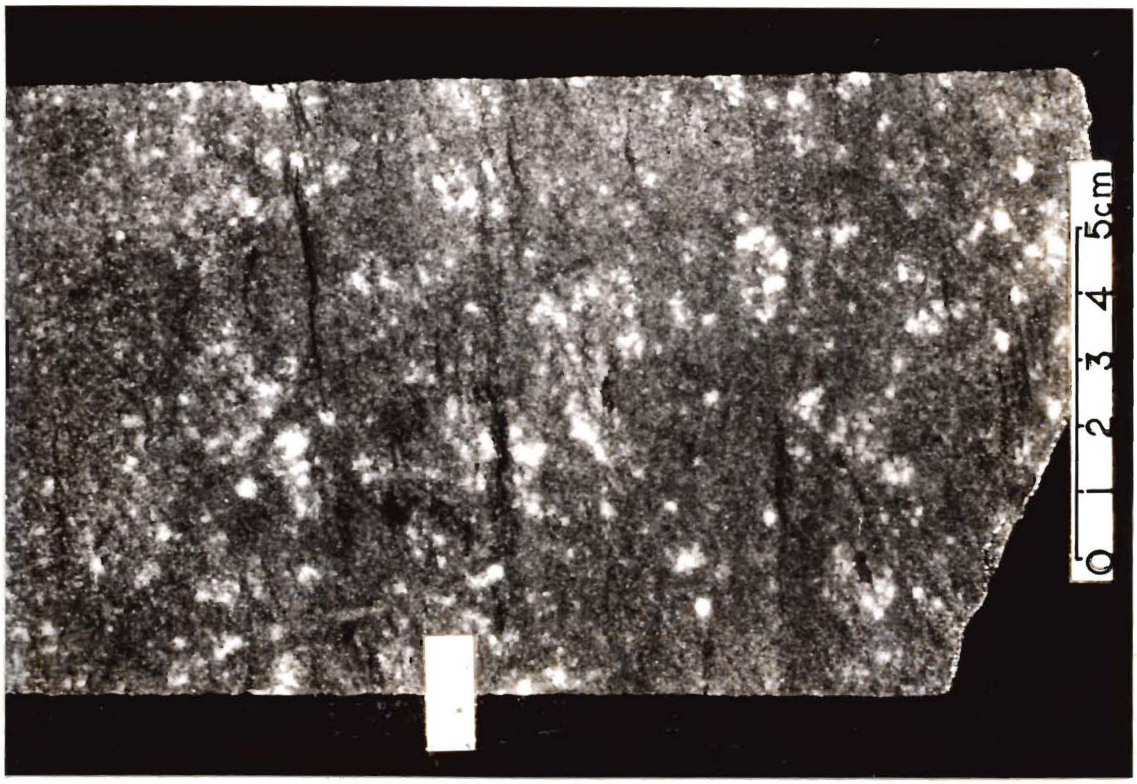
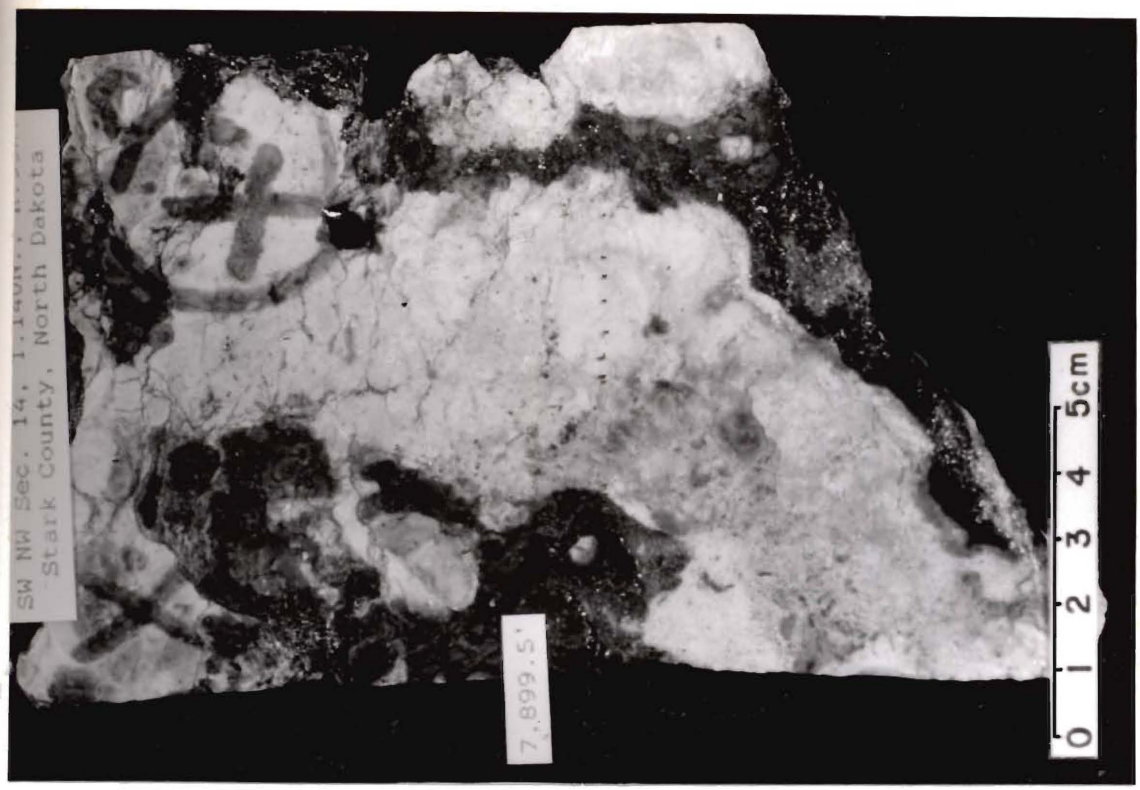

0 1 2 3 4 5cm

Figure 36 - Core photograph of light-colored, calcareous to dolomitic nodules in mottled mudstone (Lithofacies H).
NDGS# 4906 - 7,899.5 ft.

Figure 37 - Core photograph of mottled conglomerate composed of lime pebbles in mud matrix (Lithofacies H).
NDGS# 11529 - 7,795 ft.


SW NW Sec. 14,
Stark County, North Dakota
7,899.5'
0 1 2 3 4 5cm

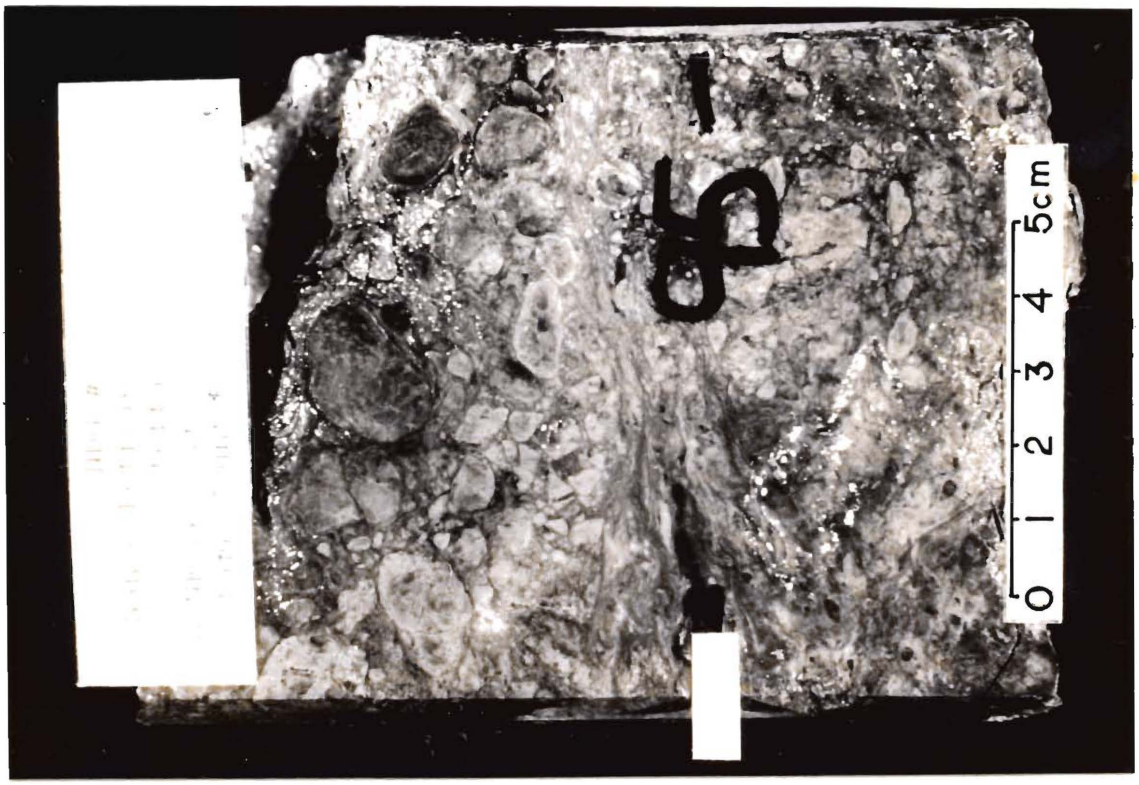

0 1 2 3 4 5cm

Figure 38 - Core photograph of moderate-orange-pink, nodular anhydrite in mottled mudstone (Lithofacies H).
NDGS# 10688 - 8,159 ft.


NDGS#: 10688
Union Texas Petroleum Corporation
Zalesky #7-1
SE SE Sec. 7, T.140N., R.98W
Stark County, North Dakota
0 1 2 3 4 5cm

northwestern North Dakota makes it impossible to identify this lithofacies.

Diagenetic Characteristics of Tyler Sandstones

Introduction

Diagenesis as discussed here includes physical and chemical processes which affected the Tyler sandstones after deposition (Pettijohn and others, 1987). Physical processes include compaction and deformation of detrital grains during burial. Chemical processes include precipitation of cements and authigenic clay minerals and replacement of detrital grains and cements during burial.

Cements

Quartz

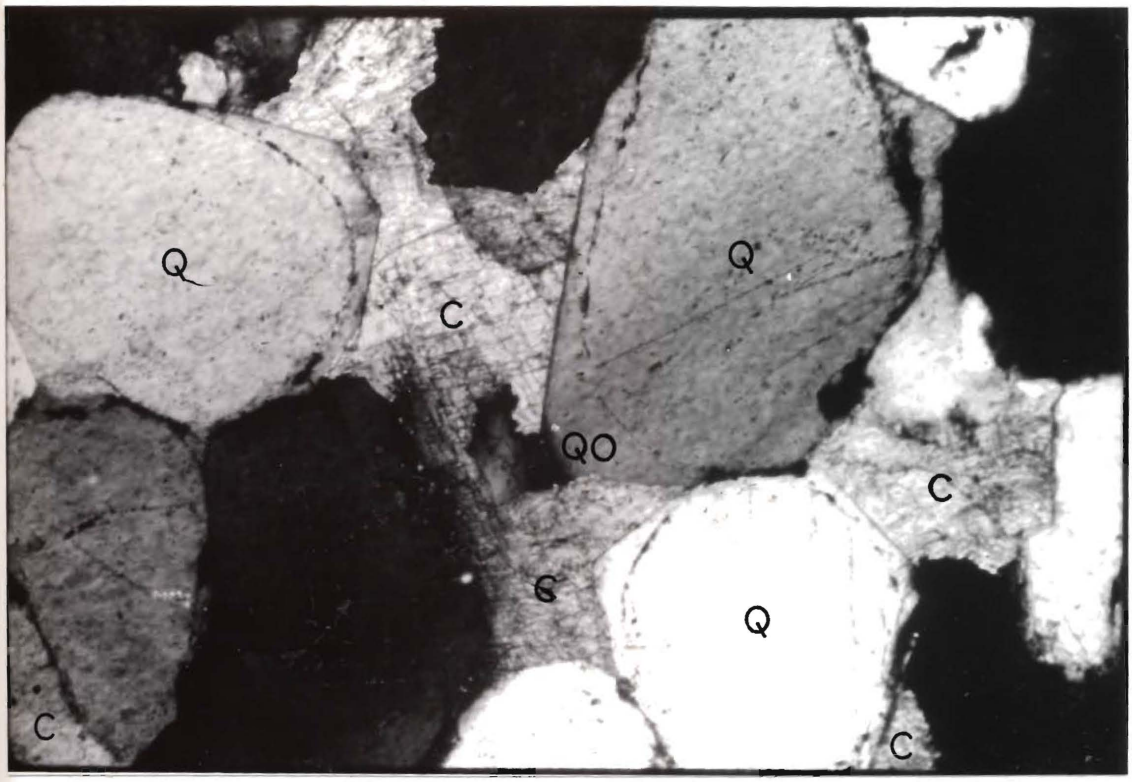
Quartz occurs as authigenic overgrowths in optical continuity with detrital quartz grains, resulting in euhedral crystal faces or a mosaic of interlocking overgrowths (Fig. 39).

Amorphous Silica (Opal)

A brown coating on quartz grains and quartz overgrowths (Fig. 40) partially fills pore space, and consists primarily of silicon, chlorine, and calcium, is interpreted as amorphous silica or opal. In thin-section this material resembles a clay coating on quartz grains (Fig. 40); however, scanning electron microscopy/X-ray microanalysis reveals its morphology (Fig. 41) and chemical composition. The presence of amorphous silica in Tyler sandstones can only be verified in very porous sandstones where other cements and authigenic clay minerals are absent.

Figure 39 - Photomicrograph of authigenic quartz overgrowths and calcite cement (Lithofacies E). C=Calcite, Q=Quartz, QO=Quartz Overgrowth. NDGS# 3951 - 7,927.2 ft. Field of view is 1.0 mm.

Figure 40 - Photomicrograph of brown amorphous silica (opal) coating quartz grains (Lithofacies F). AS=Amorphous Silica, Q=Quartz, P=Porosity. NDGS# 5371 - 7,980 ft. Field of view is 2.5 mm.


Q
C
Q
QO
C
C
Q
C
C

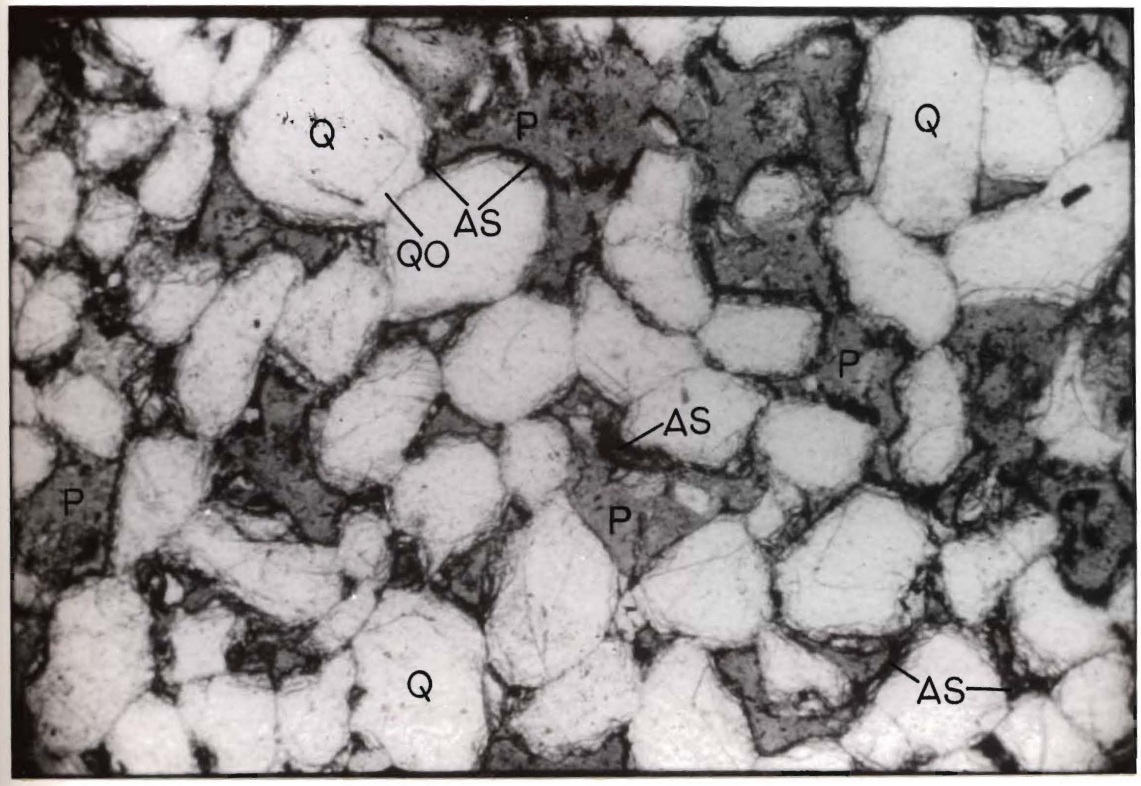
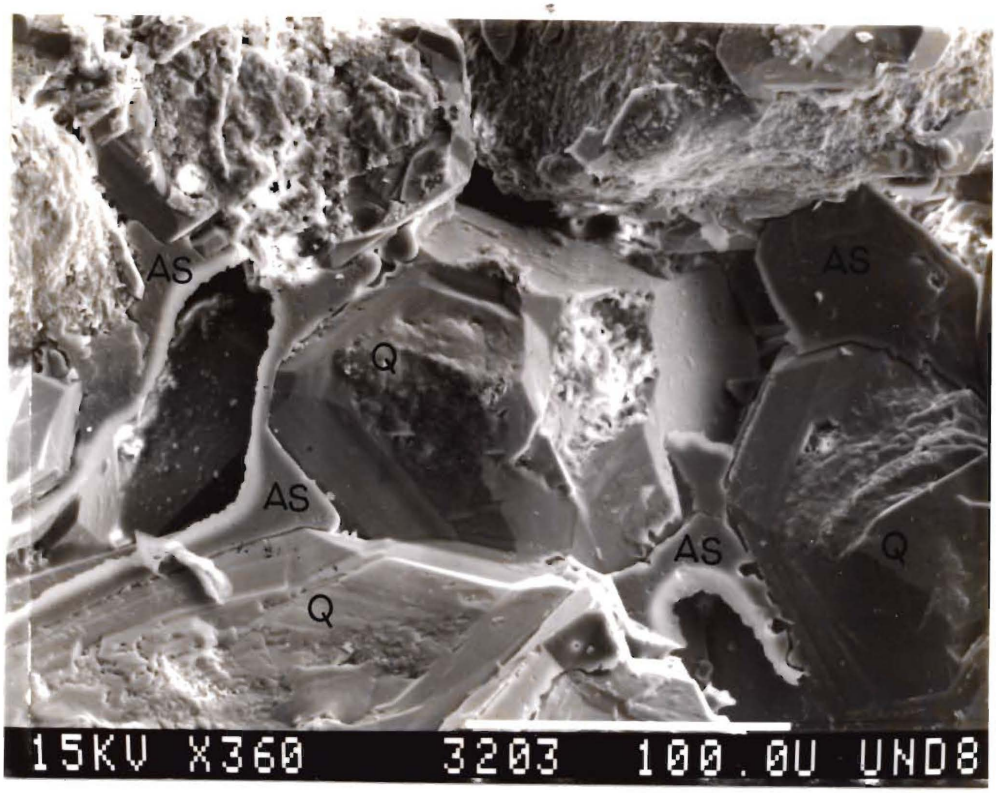

Q
P
Q
QO
AS
P
AS
P
P
Q
AS

Figure 41 - Scanning electron micrograph of amorphous silica (opal) coating quartz grains (Lithofacies D). AS=Amorphous Silica, Q=Quartz. NDGS# 1522 - 8,111 ft. Bar scale is 100 um.


AS
Q
AS
AS
Q
AS
Q
15KV X360 3203 100.0U UND8

Carbonate

Calcite (Fig. 39), ankerite (Fig. 42), and siderite (Fig. 43) occur as pore-filling cement. Siderite cement occurs as subhedral to euhedral spheroidal crystals along the surface of quartz grains or aggregates of subhedral to euhedral spheroidal crystals within pore spaces (Figs. 43 and 44). Although it is extremely difficult to distinguish between calcite and ankerite in thin-section, the iron in ankerite and siderite may oxidize and result in reddish-brown discoloration (Figs. 42 and 43). Crystallization of calcite, ankerite, and siderite has resulted in volume expansion and rearrangement of quartz grains, producing a poikilotopic texture (Fig. 45).

Sulfate

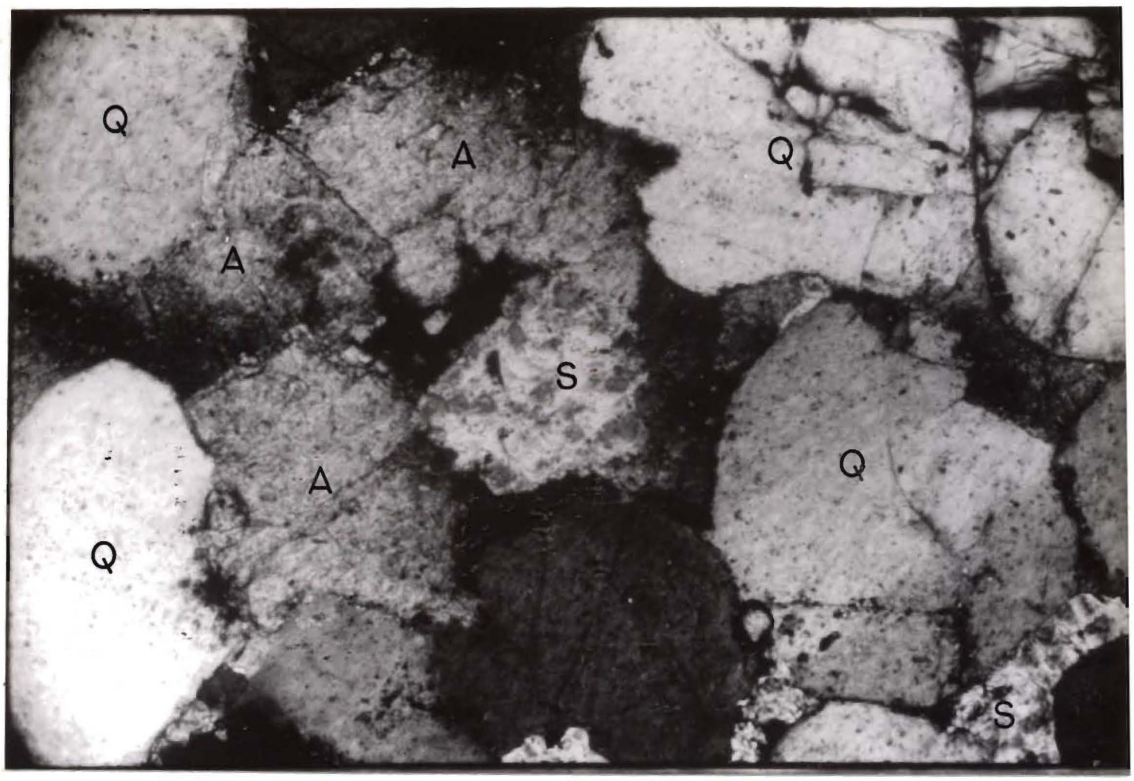
Anhydrite and barite occur as pore-filling cement (Fig. 46). Crystallization of anhydrite and barite has resulted in volume expansion and rearrangement of quartz grains, producing a poikilotopic texture (Fig. 46). Although it is impossible to distinguish between these sulfate cements in thin-section, scanning electron microscopy/X-ray microanalysis reveals the atomic number contrast between calcium and barium (Fig. 47) and their chemical composition.

Hematite

Hematite occurs as flakes coating quartz grains and as a pore-filling cement (Fig. 48). Hematite accounts for the red color of Tyler sandstones.

Figure 42 - Photomicrograph of ankerite and sulfate cement (Lithofacies E). Note reddish-brown discoloration of ankerite cement. A=Ankerite, Q=Quartz, S=Sulfate. NDGS# 3951 - 7,927.2 ft. Field of view is 1.0 mm.

Figure 43 - Photomicrograph of spheroidal siderite cement (Lithofacies D). Note reddish-brown discoloration of siderite cement. Q=Quartz, S=Siderite. NDGS# 1522 - 8,092 ft. Field of view is 2.5 mm.


Q
A
Q
A
S
A
Q
Q
S

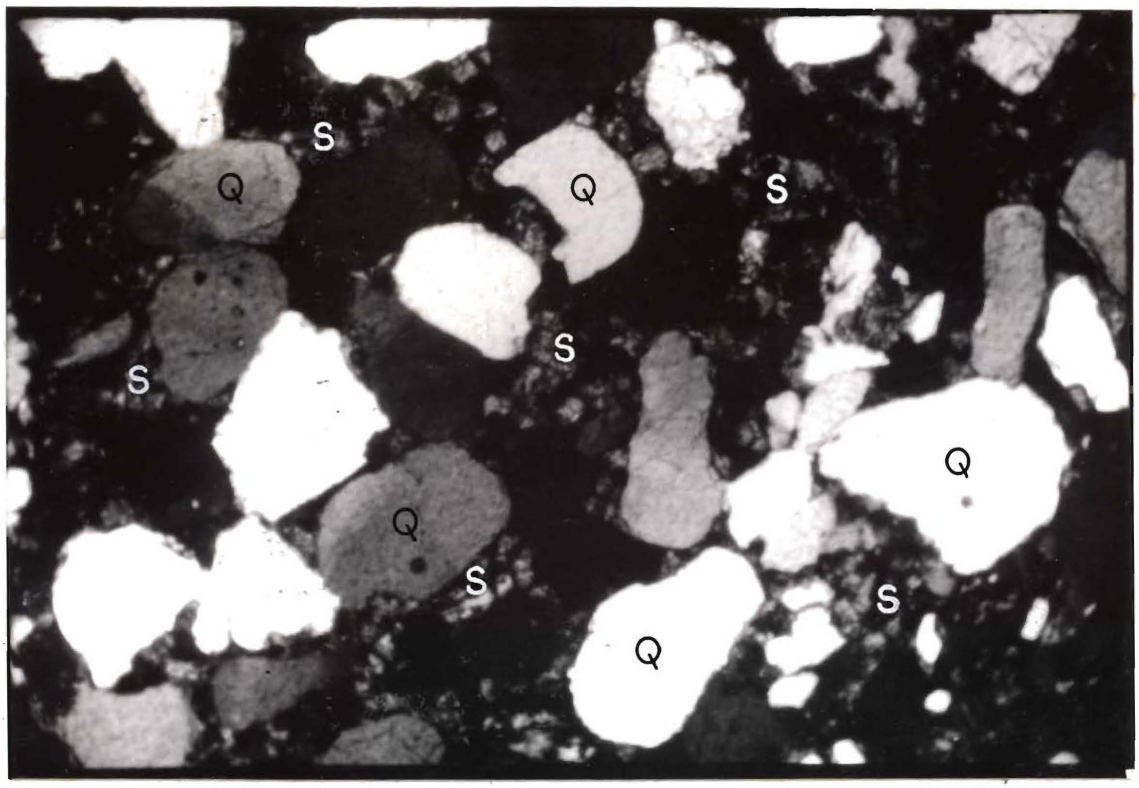
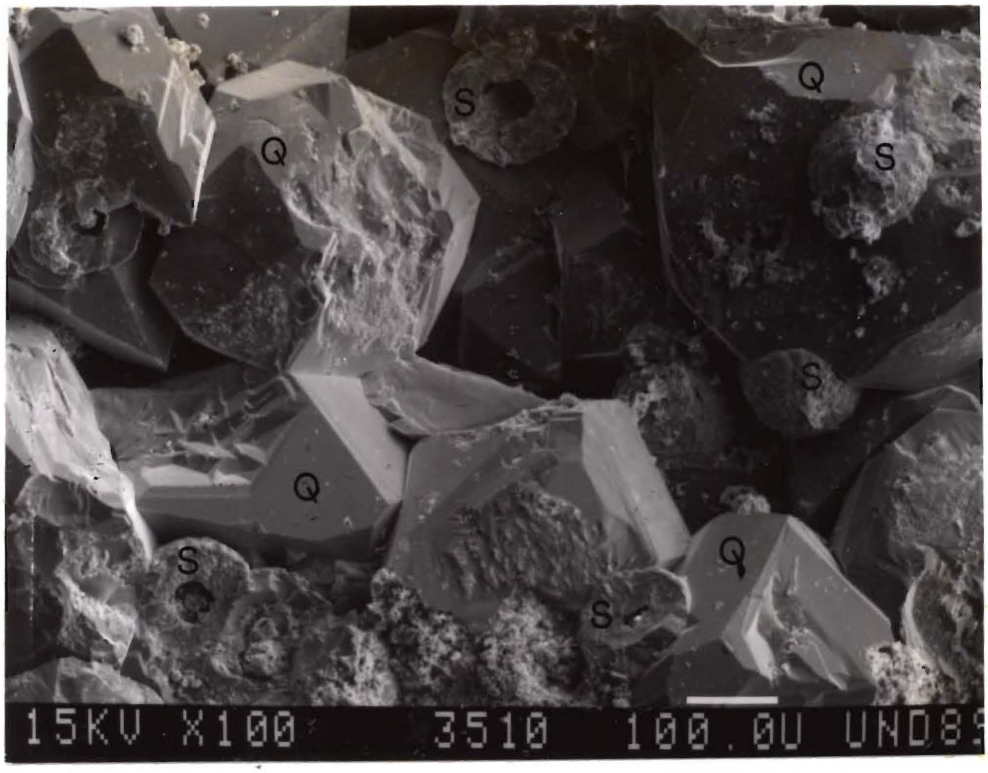

S
Q
Q
S
S
S
Q
Q
S
S
Q

Figure 44 - Scanning electron micrograph of spheroidal siderite cement (Lithofacies D). Q=Quartz, S=Siderite.
NDGS# 1522 - 8,092 ft. Bar scale is 100 um.

Figure 45 - Photomicrograph of calcite, ankerite, and siderite cement producing poikilotopic texture (Lithofacies D).
A=Ankerite, C=Calcite, Q=Quartz, S=Siderite.
NDGS# 3896 - 8,052 ft. Field of view is 2.5 mm.


Q
S
Q
S
Q
S
Q
S
Q
S
15KV X100 3510 100.0U UND8

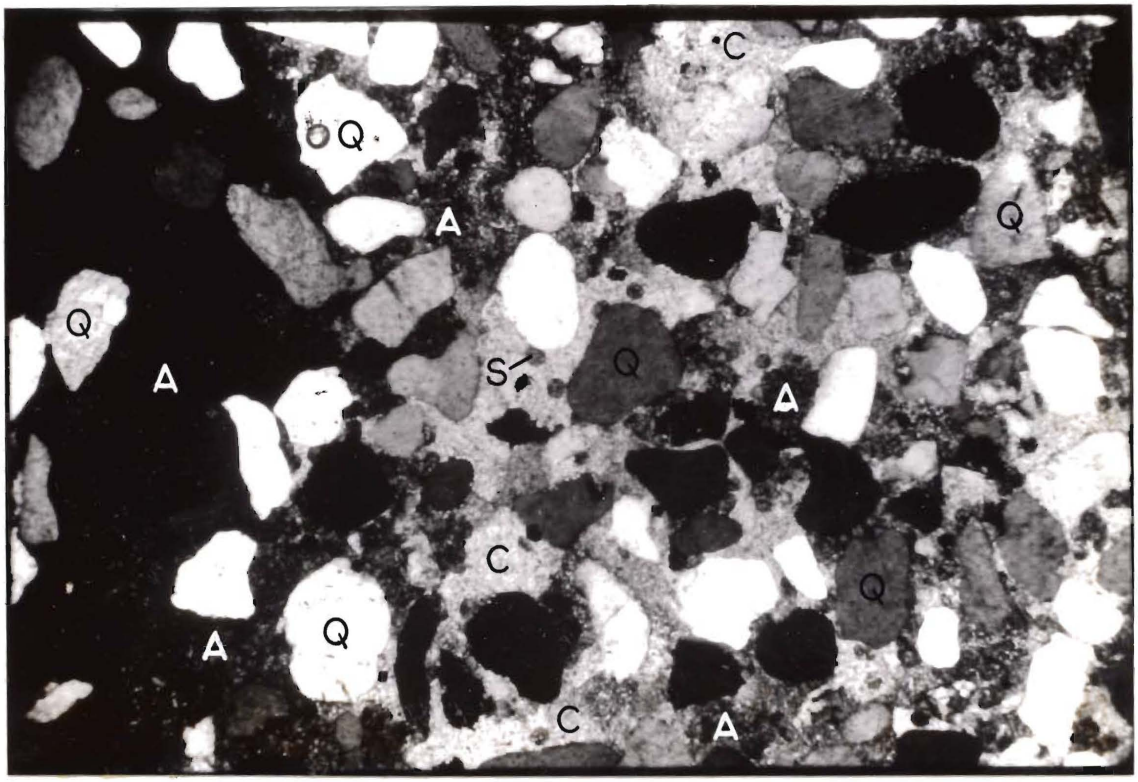
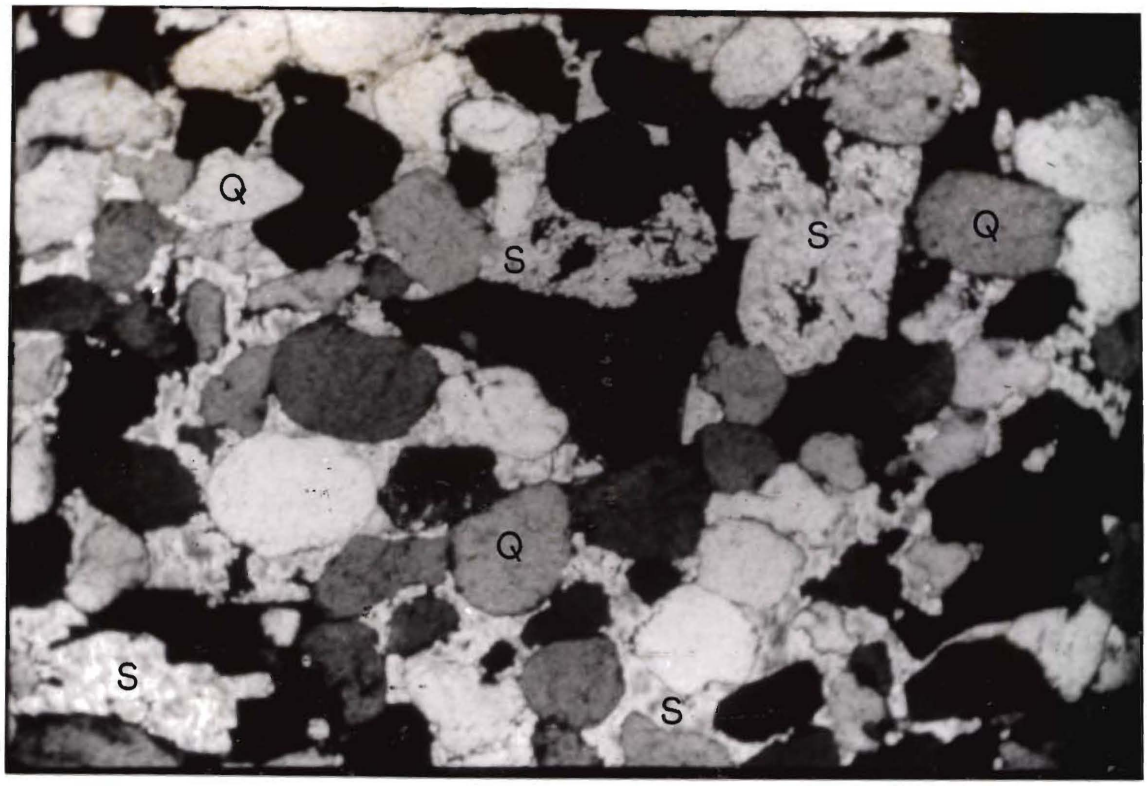

C
Q
A
Q
Q
A
S
Q
A
C
Q
A
Q
C
A

Figure 46 - Photomicrograph of sulfate cement producing poikilotopic texture (Lithofacies E). Q=Quartz, S=Sulfate. NDGS# 3951 - 7,938 ft. Field of view is 2.5 mm.

Figure 47 - Backscatter electron image micrograph of calcite cement and barite cement (Lithofacies F). Note the large atomic number contrast between calcium (20) and barium (56). Atomic number contrasts are revealed by differences in shades of gray in the photograph. Lighter shades have a higher atomic number. B=Barite, C=Calcite. NDGS# 5805 - 8,134.3 ft. Bar scale is 100 um.


Q
S
S
Q
Q
S
S

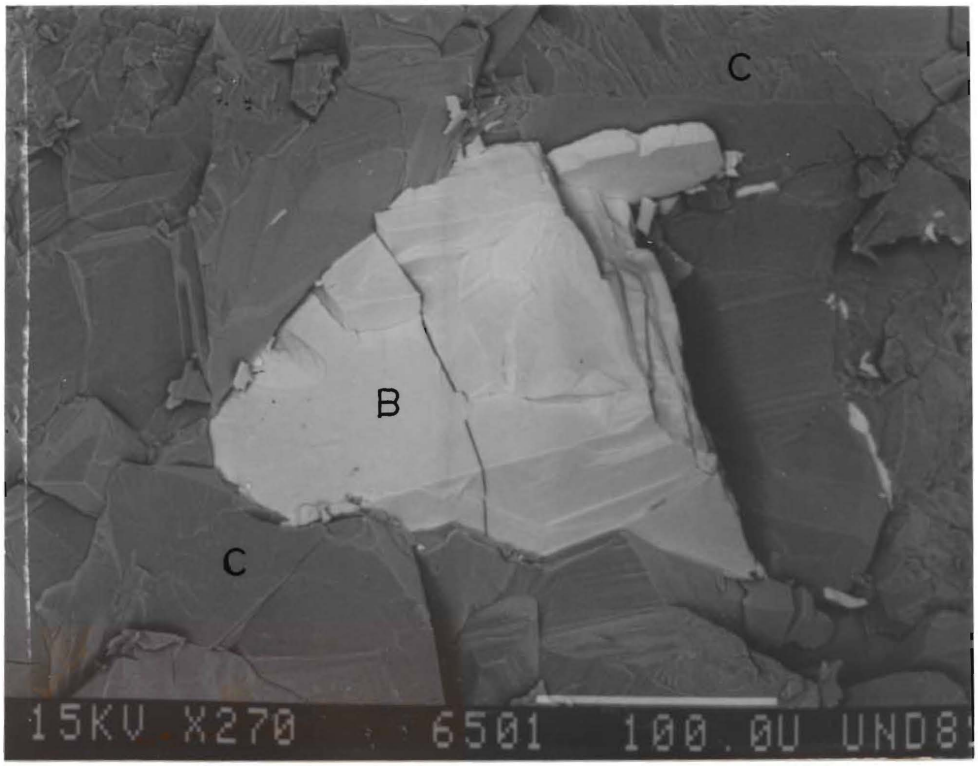
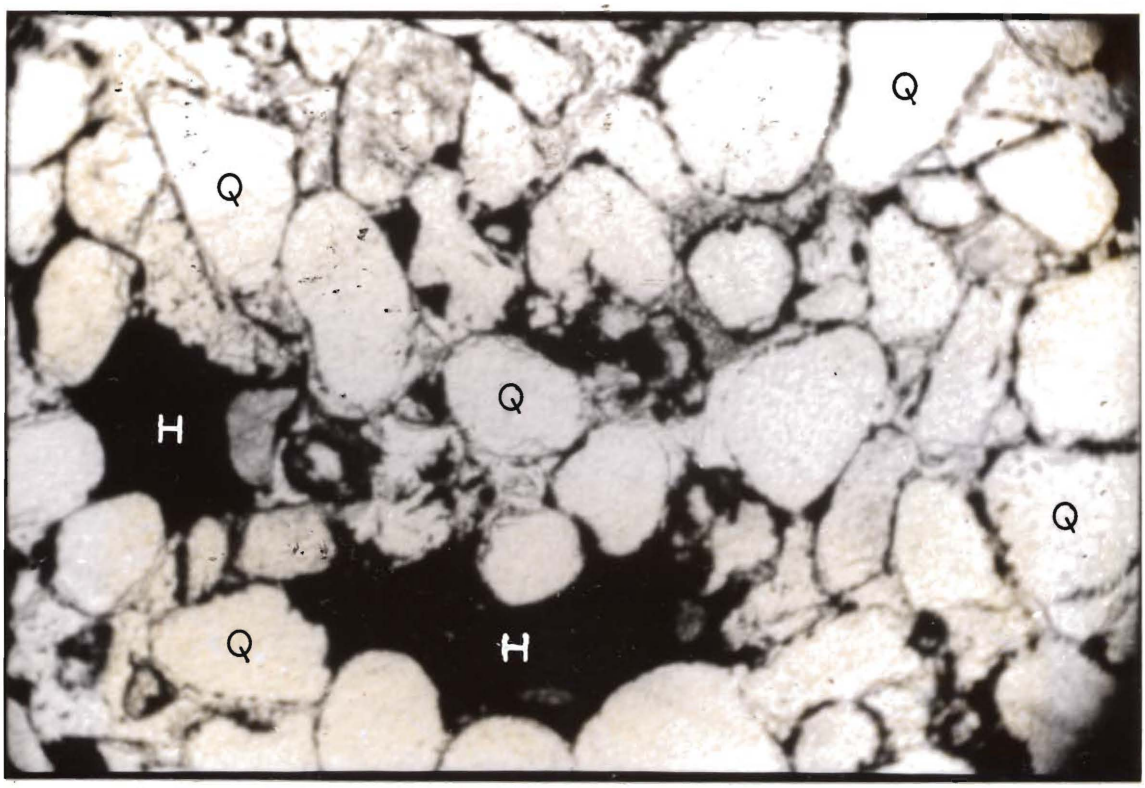

C
B
C
15KV X270 6501 100.0U UND8

Figure 48 - Photomicrograph of hematite cement and hematite coating quartz grains (Lithofacies E). Hematite probably inhibited authigenic quartz overgrowths. H=Hematite, Q=Quartz. NDGS# 4524 - 8,062 ft. Field of view is 2.5 mm.


Q
Q
Q
H
Q
Q
Q
H

Pyrite

Pyrite is finely disseminated throughout the sandstones and occurs as a pore-filling cement (Fig. 49). Pyrite also occurs as detrital grains in Tyler sandstones.

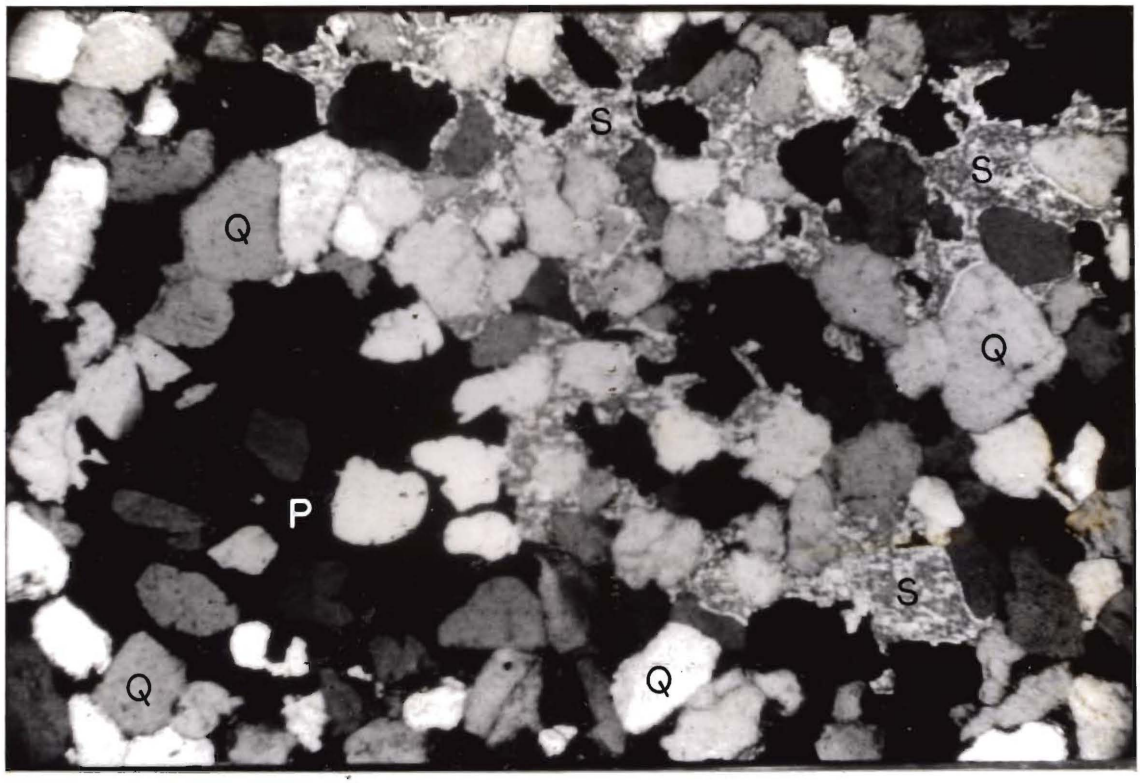
Clay Minerals

Clay minerals in these sandstones are both detrital and authigenic, but usually the relative proportion of clay of each origin can not be determined. Detrital clay (Fig. 50) occurs as well-dispersed matrix and silt- to sand-size aggregates of clay minerals introduced during deposition. Wilson and Pittman (1977) suggested that some detrital clay that forms matrix in sandstones may be biogenic clay or mud pellets produced by ingestion and excretion of mud by organisms. Some ductile aggregates of clay minerals were probably deformed during compaction and formed matrix. Wilson and Pittman (1977) suggested that bioturbation of sediments by organisms may result in mixing and introduction of mud into sand as matrix. Infiltration clays probably moved into the interstices of sand by downward or lateral migration of water and formed matrix (Walker, 1967; Crone, 1974; Walker and Crone, 1974; Wilson and Pittman, 1977; Walker and others, 1978; Molenaar, 1986; Matlack and others, 1989). Detrital clays and infiltration clays form quartz grain coatings and meniscus-shaped bridges, which exhibit an undulating appearance and enclose quartz grains.

Authigenic kaolinite occurs as aggregates of delicate stacked plates resembling "books" or "worms" (Fig. 51) within pore space (Fig. 52). Kaolinite is the most abundant authigenic clay mineral in

Figure 49 - Photomicrograph of pyrite cement and sulfate cement (Lithofacies F). Note pyrite cement has replaced sulfate cement. P=Pyrite, Q=Quartz, S=Sulfate. NDGS# 5442 - 8,148 ft. Field of view is 2.5 mm.

Figure 50 - Photomicrograph of detrital clay forming matrix in quartzarenite (Lithofacies D). DC=Detrital Clay, Q=Quartz. NDGS# 6015 - 7,893 ft. Field of view is 4.0 mm.


S
S
Q
Q
P
S
Q
Q
Q

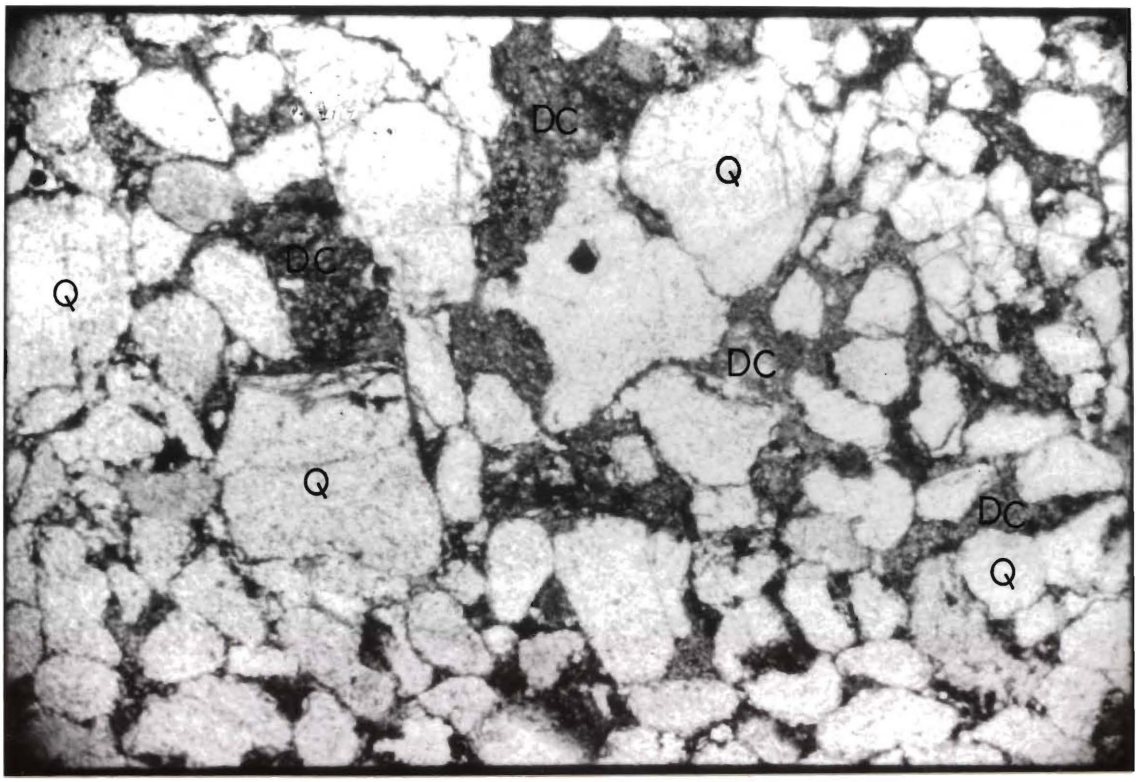
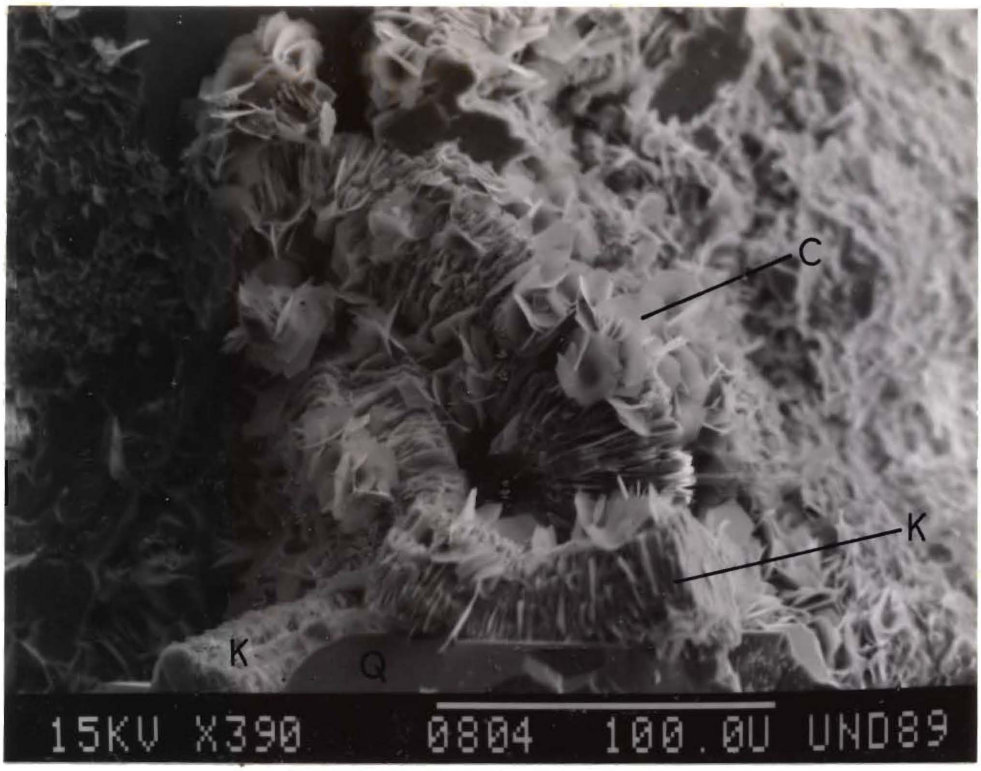
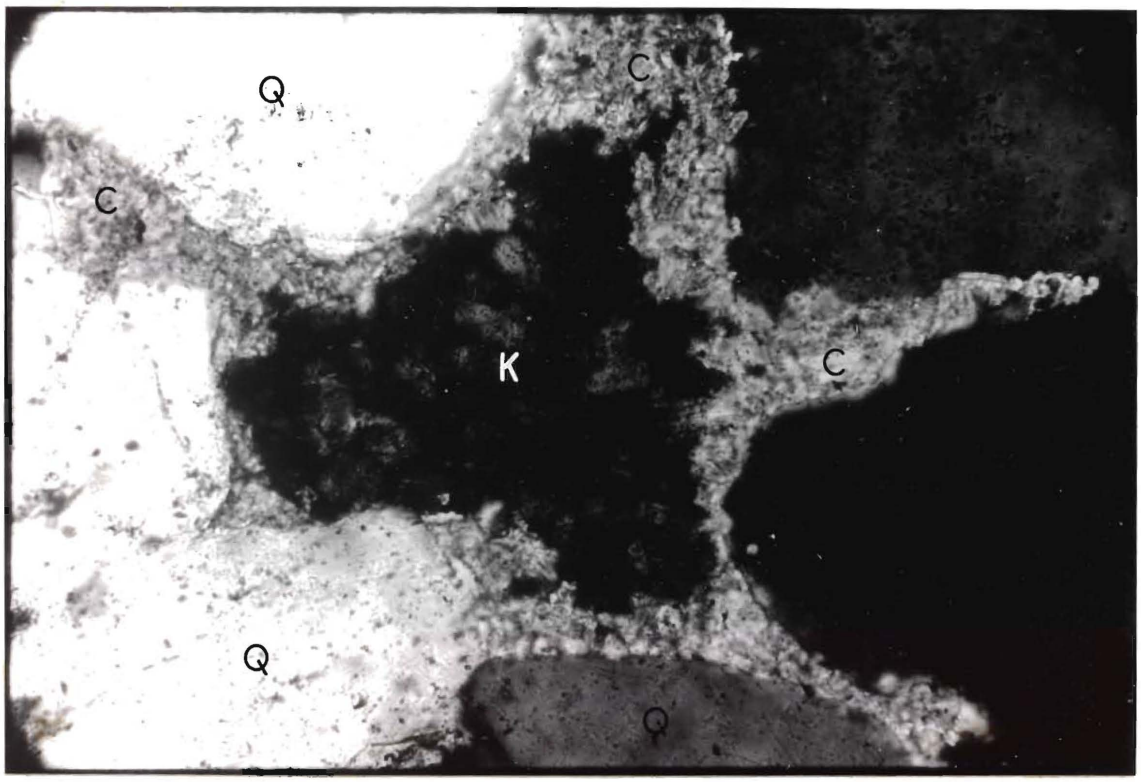

DC
Q
DC
Q
DC
Q
DC
Q

Figure 51 - Scanning electron micrograph of authigenic kaolinite and authigenic chlorite (Lithofacies E). C=Chlorite, K=Kaolinite, Q=Quartz. NDGS# 4524 - 8,062 ft. Bar scale is 100 um.

Figure 52 - Photomicrograph of calcite cement and authigenic kaolinite (Lithofacies F). C=Calcite, K=Kaolinite, Q=Quartz. NDGS# 5442 - 8,148 ft. Field of view is 0.4 mm.


C
K
K
Q
15KV X390 0804 100.0U UND89


Q
C
C
K
C
Q
Q

the Tyler sandstones. Authigenic chlorite occurs as plates coating quartz sand grains (Fig. 53) and as a rosette growth form (Fig. 51) within pore space (Fig. 54). Authigenic illite occurs as irregular flakes and sheets with lath-like projections (Fig. 55) within pore space (Fig. 56). Authigenic kaolinite, illite, and chlorite can also occur in the same pore space (Fig. 51).

Authigenic Feldspar

Authigenic feldspar occurs as overgrowths in optical continuity with detrital feldspar grains resulting in euhedral crystal faces or a mosaic of interlocking feldspar and quartz overgrowths (Fig. 57).

Replacement

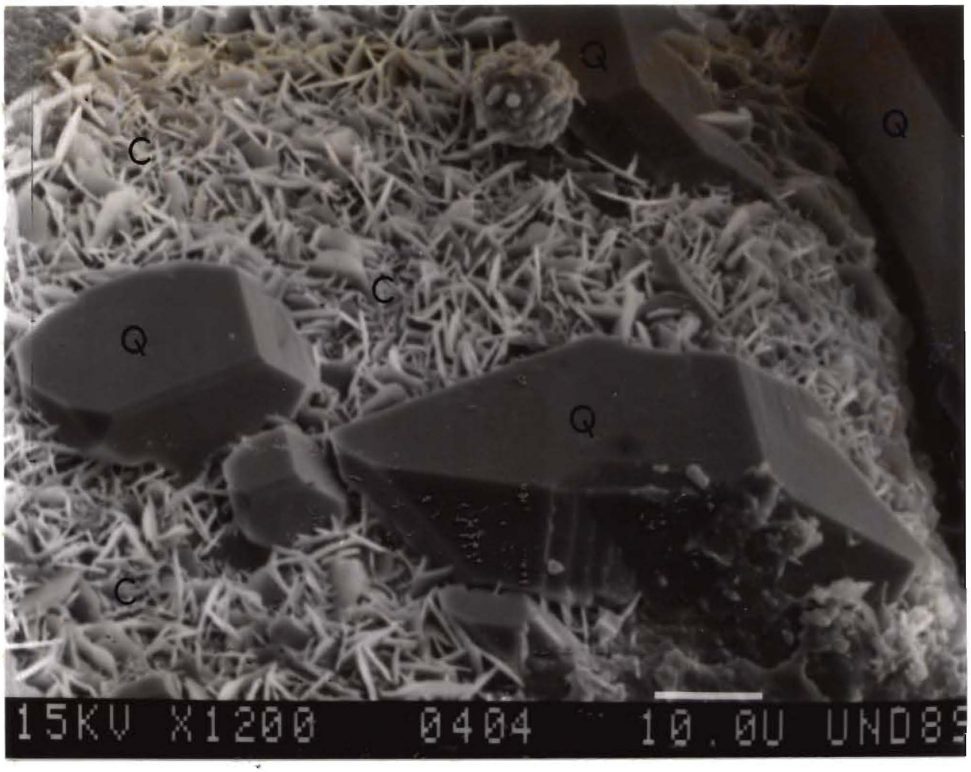
Partial replacement of some detrital grains and cements in Tyler sandstones occurred. Calcite and ankerite replaced quartz (Fig. 58) and ferromagnesian rock fragments (Fig. 59) and pyrite replaced sulfate cement (Fig. 49). In addition, kaolinite and illite replaced feldspar grains and rock fragments (Fig. 60), illite replaced quartz (Fig. 55), and chlorite replaced ferromagnesian rock fragments (Fig. 59).

Secondary Porosity

Oversized pores are interpreted as secondary porosity (Fig. 61), which originated from the dissolution of carbonate cements. The carbonate cements probably occupied primary and secondary porosity. Dissolution of the carbonate cements reopened hybrid primary and secondary porosity.

Figure 53 - Scanning electron micrograph of authigenic chlorite plates coating quartz grains (Lithofacies D). Chlorite probably inhibited authigenic quartz overgrowths. C=Chlorite, Q=Quartz. NDGS# 3896 - 8,100.1 ft. Bar scale is 10 um.

Figure 54 - Photomicrograph of authigenic chlorite (Lithofacies E). C=Chlorite, Q=Quartz. NDGS# 3951 - 7,927.2 ft. Field of view is 1.0 mm.


Q
Q
C
C
Q
Q
C
15KV X1200 0404 10.0U UND8

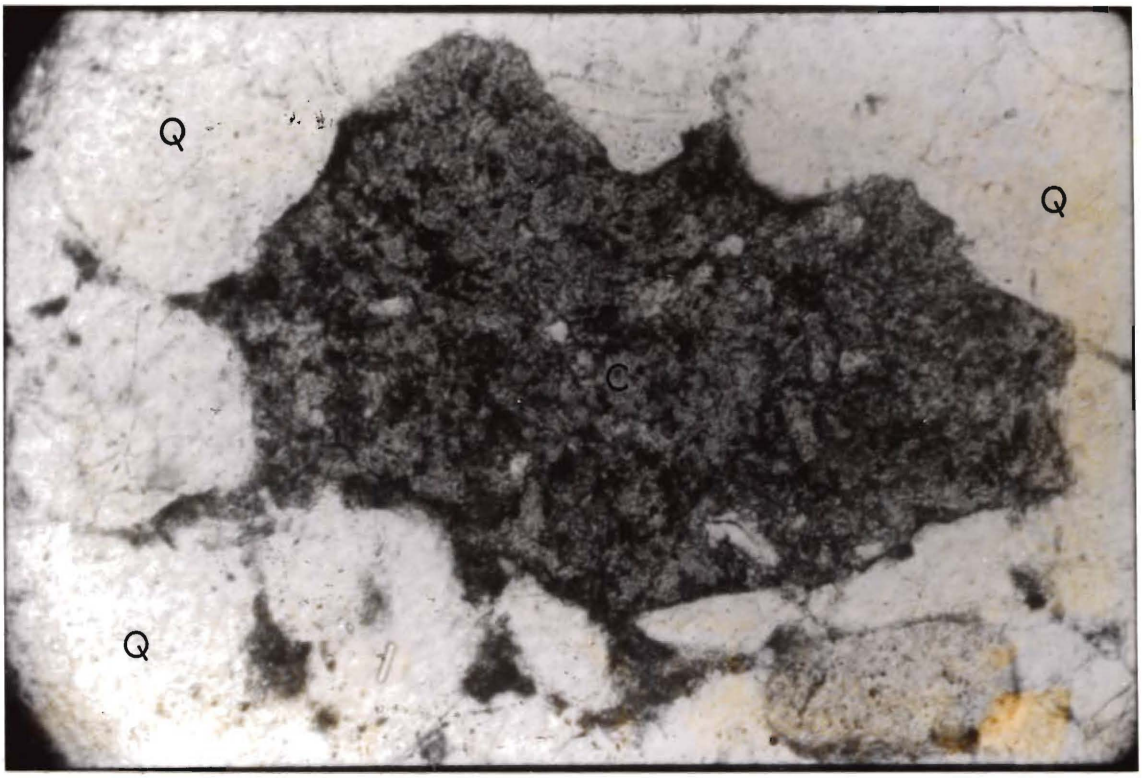
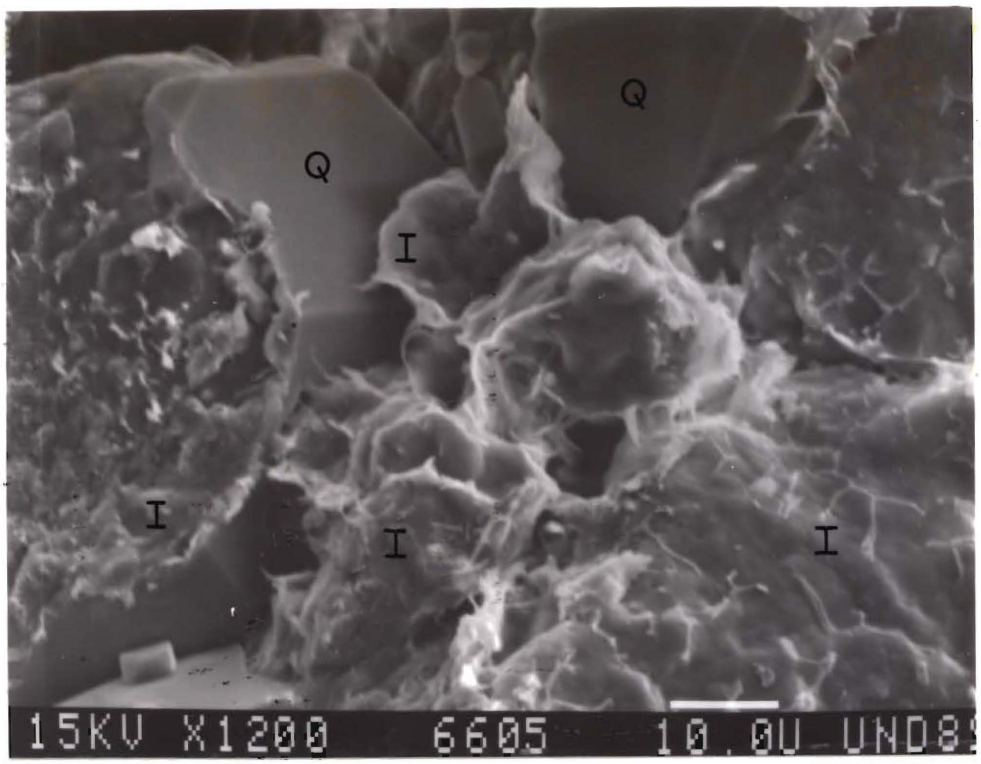

Q
Q
C
Q

Figure 55 - Scanning electron micrograph of authigenic illite (Lithofacies F). Note authigenic illite has replaced a quartz grain. I=Illite, Q=Quartz.
NDGS# 4906 - 7,902.8 ft. Bar scale is 10 um.

Figure 56 - Photomicrograph of calcite cement and authigenic illite (Lithofacies F). C=Calcite, I=Illite, Q=Quartz.
NDGS# 4906 - 7,902.8 ft. Field of view is 1.0 mm.


Q
Q
Q
I
I
I
I
15KV X1200 6605 10.0U UND8

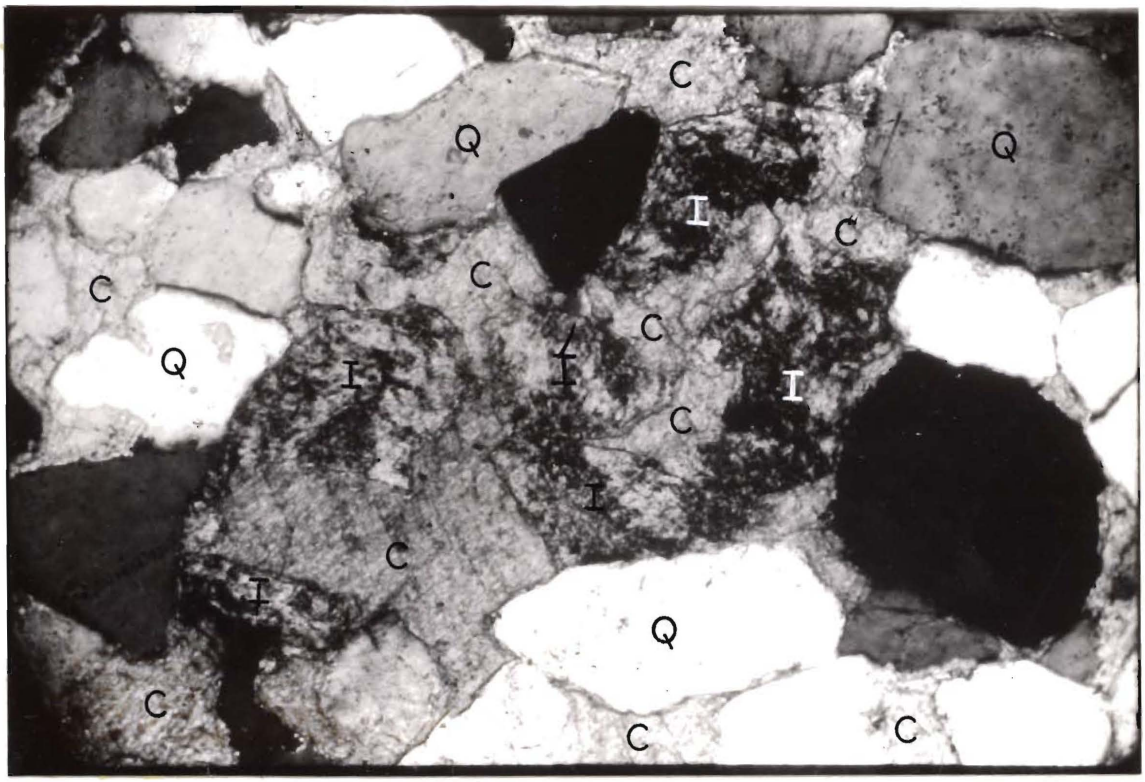
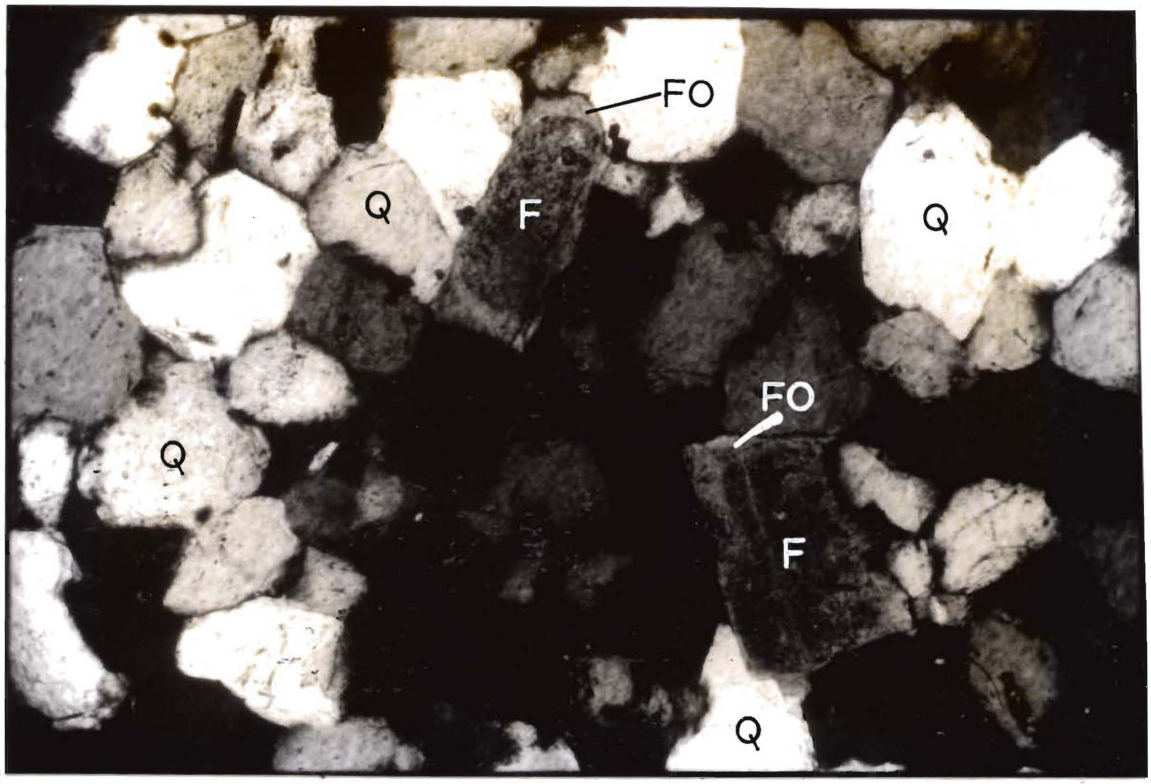

C
Q
Q
I
C
C
C
Q
I
I
C
I
C
I
C
Q
C
C
C

Figure 57 - Photomicrograph of authigenic feldspar overgrowths (Lithofacies D). F=Feldspar, FO=Feldspar Overgrowth, Q=Quartz. NDGS# 1522 - 8,111 ft. Field of view is 1.0 mm.

Figure 58 - Scanning electron micrograph of calcite cement which has replaced a quartz grain (Lithofacies D). C=Calcite, Q=Quartz, QO=Quartz Overgrowth. NDGS# 3896 - 8,052 ft. Bar scale is 100 um.


FO
Q
F
Q
FO
Q
F
Q

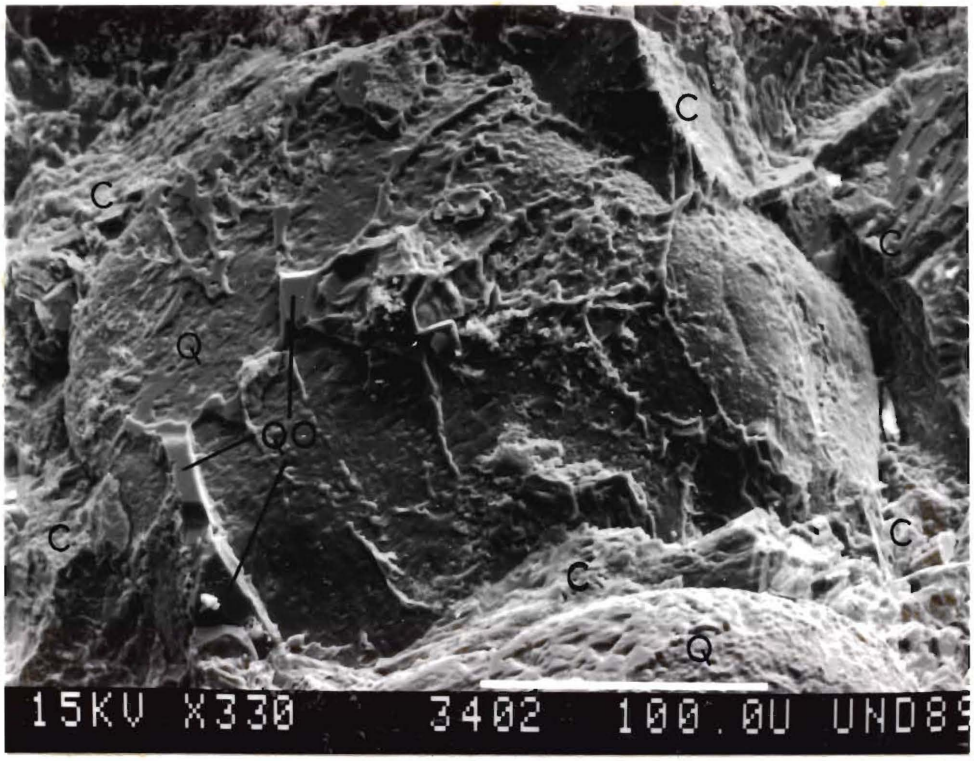
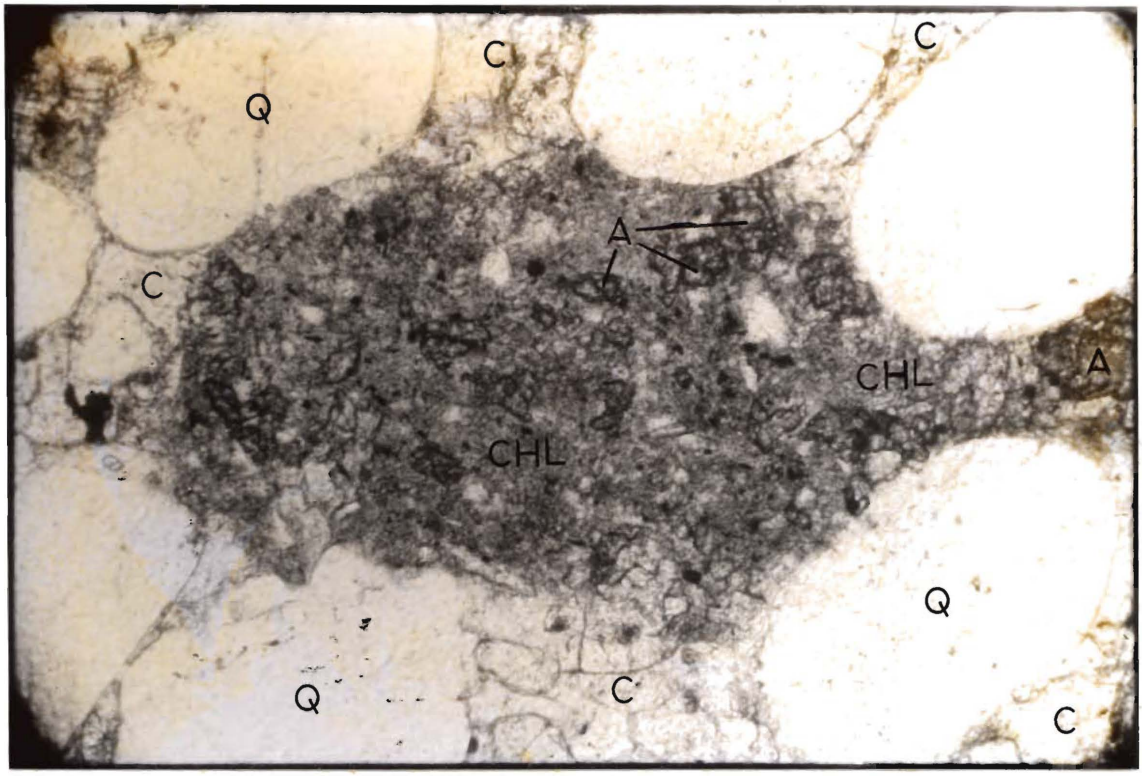

C
C
C
Q
QO
C
C
C
Q
15KV X330 3402 100.0U UND8

Figure 59 - Photomicrograph of calcite cement and ankerite and chlorite which have replaced a ferromagnesian rock fragment (Lithofacies D). A=Ankerite, C=Calcite, CHL=Chlorite, Q=Quartz. NDGS# 4802 - 8,060 ft. Field of view is 1.0 mm.

Figure 60 - Scanning electron micrograph of kaolinite and illite which have replaced a feldspar grain or rock fragment (Lithofacies D). I=Illite, K=Kaolinite, Q=Quartz, S=Siderite. NDGS# 1522 - 8,092 ft. Bar scale is 100 um.


C
C
Q
A
C
CHL
A
CHL
Q
Q
C
C

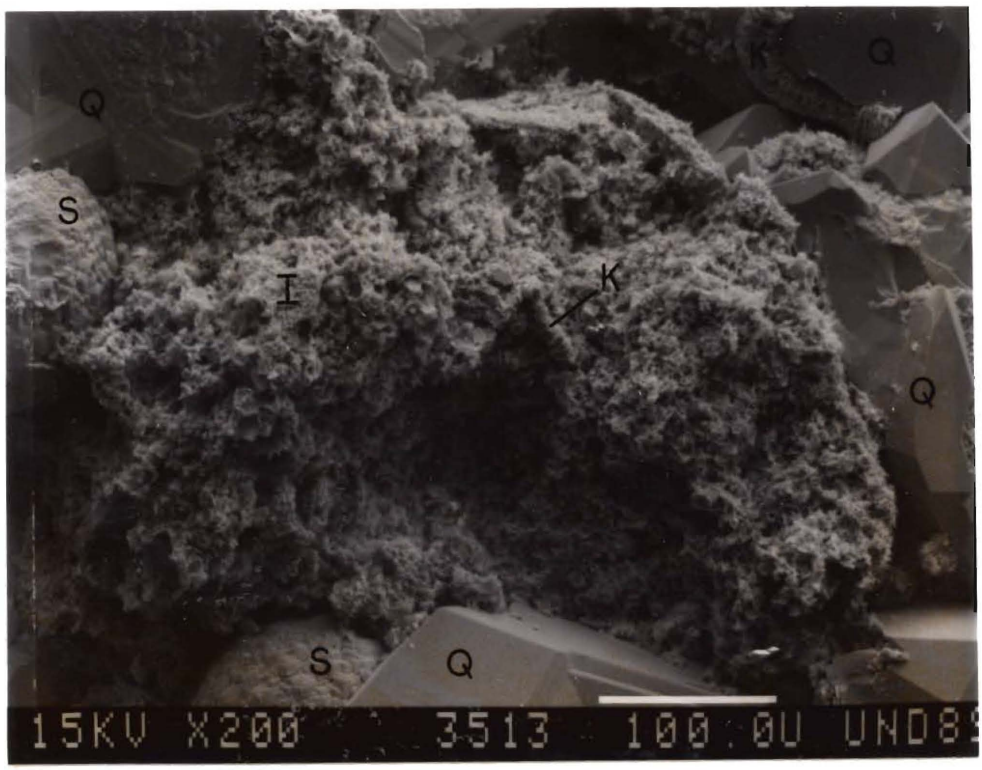
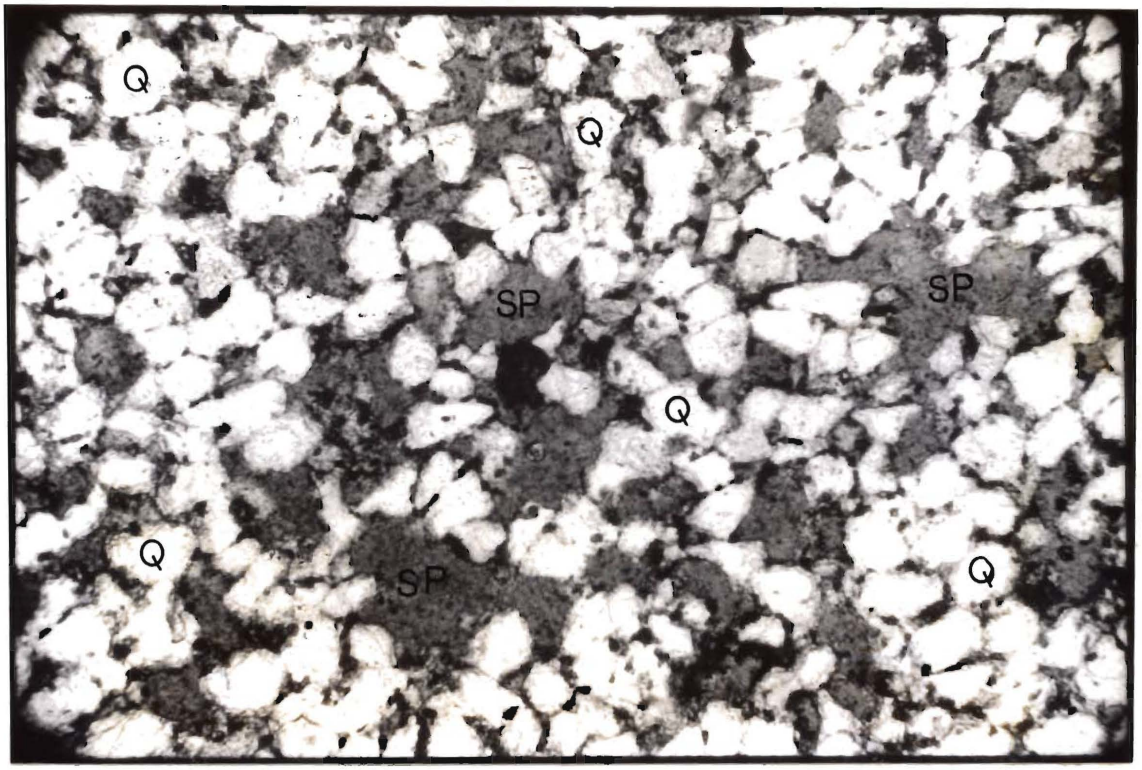

K
Q
Q
S
I
K
Q
S
Q
15KV X200 3513 100.0U UND8

Figure 61 - Photomicrograph of secondary porosity which developed by dissolution of carbonate cement (Lithofacies D). Q=Quartz, SP=Secondary Porosity. NDGS# 4971 - 7,953 ft. Field of view is 2.5 mm.


Q
Q
SP
SP
Q
Q
SP
Q

INTERPRETATIONS

Paleoenvironmental Interpretations of the Tyler Formation

Introduction

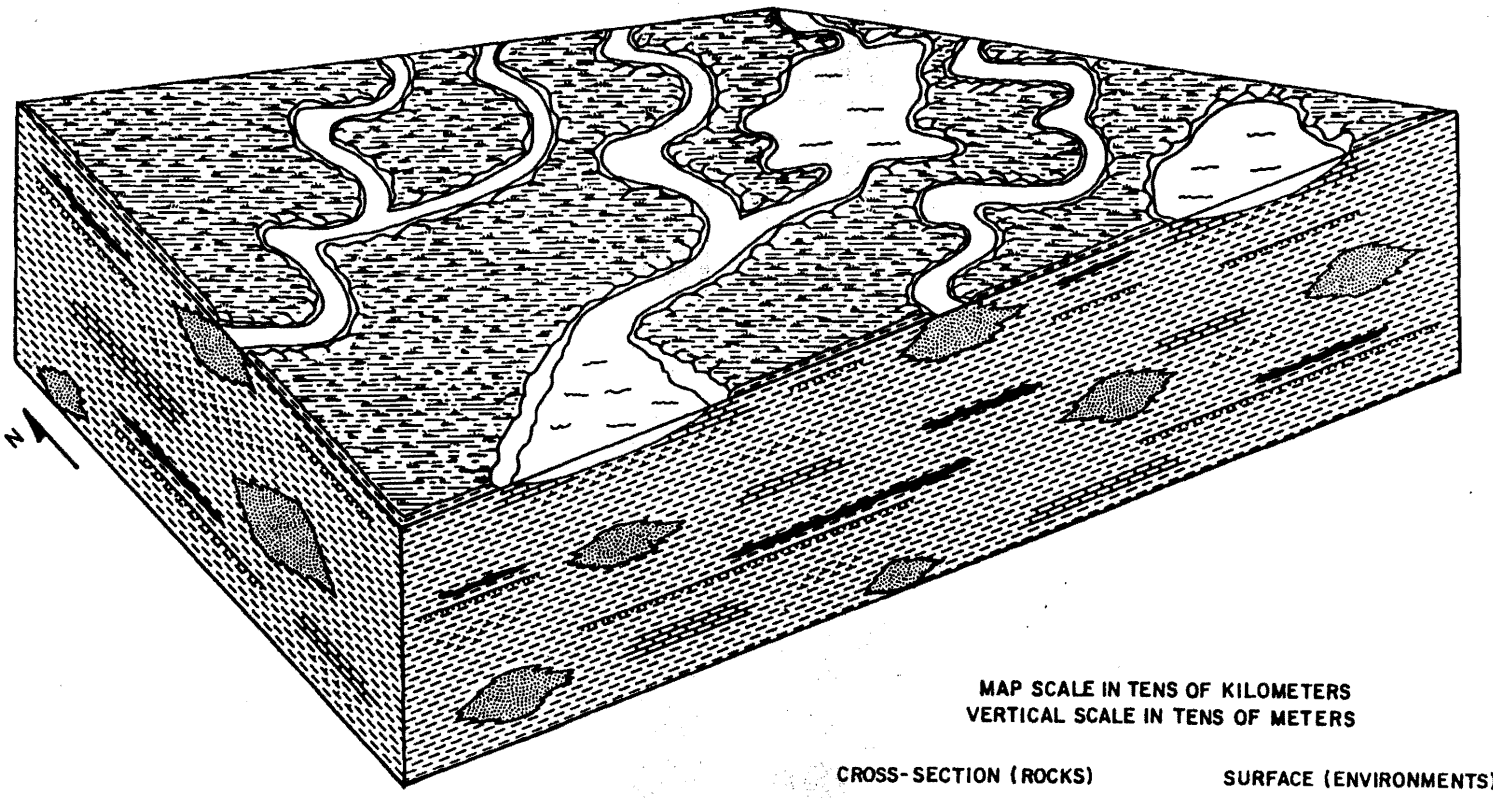
The Tyler Formation in northwestern North Dakota is correlative with the lower unit of the Tyler Formation in southwestern North Dakota (Plate 1 A-A'). The distribution patterns of the sandstones developed in the middle and rarely at the base of the Tyler Formation (Plate 3) and associated sedimentary rocks, suggest a river channel system on a low-lying coastal plain (Fig. 62). Lithofacies A-D were interpreted as caliche paleosols, backswamps, flood-plain and estuary deposits, and river channels, respectively. Lithofacies E was not identified in northwestern North Dakota. Fine-grained sediments accumulated by vertical accretion on the flood plain and in estuaries and sand accumulated by lateral accretion on point bars in meandering rivers. The complexity of the lithofacies indicates that distinctly different depositional environments existed in adjacent areas and therefore succeeded one another in sequence.

The upper unit (Sturm, 1982a) is not present in northwestern North Dakota (Plate 1 A-A'). Sturm's (1982a, 1982b, 1983, 1987) paleoenvironmental interpretations of the lithofacies in the upper unit will be used.

Lithofacies A

Sturm (1982a) interpreted lithofacies A as a marsh deposit, near an interdistributary bay on a delta plain, characterized by flooding and abundant plant life. Sturm (1982b) interpreted medium-gray and dusky-red mudstones in this lithofacies as overbank deposits in areas

Figure 62 - Paleogeographic reconstruction of the depositional environments and distribution of facies relationships during deposition of the Tyler Formation in northwestern North Dakota.



MAP SCALE IN TENS OF KILOMETERS
VERTICAL SCALE IN TENS OF METERS

CROSS-SECTION (ROCKS)

- SANDSTONE
- ARGILLACEOUS LIMESTONE
- CALCAREOUS SHALE
- NONCALCAREOUS SHALE
- COAL UNDERLAIN BY CLAYSTONE
- CALCAREOUS NODULES IN MOTTLED MUDSTONE

SURFACE (ENVIRONMENTS)

- RIVER CHANNEL
- ESTUARY OR LAKE
- FLOOD PLAIN, INCLUDES CALICHE PALEOSOLS AND BACKSWAMPS

periodically wetted by flooding or very high tides. Sturm (1982b) also interpreted varicolored mudstones in this lithofacies as an interdistributary-bay deposit. The varicolored, mottled mudstone of lithofacies A is interpreted as a caliche paleosol which developed on a flood plain (Cant, 1982; Walker and Cant, 1984; Collinson, 1986) (Fig. 62). Deposition in this environment was solely the result of overbank flow during high river stages (flooding). The sediments were composed primarily of clay and silt.

The red and yellow pigment in this lithofacies resulted from weathering of iron-rich silicates. Walker (1967, 1974) and Walker and others (1978) have argued for the in-place weathering of iron-rich silicates as a major source of red and yellow hematite pigment. The dissolution of iron-rich silicates and precipitation of hematite was probably enhanced by circulation of meteoric ground water.

The varicolored, mottled mudstones could be explained by applying Walker's (1967) stability field diagram comparing the Eh-pH stability relationship of an aqueous ferric-ferrous ion system with the Eh-pH distribution of ground water. In general, a decrease in the Eh and pH causes reducing conditions in local ground water and results in gray to black rocks, while an increase in Eh and pH causes oxidizing conditions and results in red and yellow rocks. Therefore, original differences or subsequent changes in the Eh and/or pH of ground water can produce mottled, variegated or irregularly interbedded red, yellow, and gray colored rocks (Walker, 1967). The resultant variations in color would be expected on the dynamic coastal plain,

where changes in water depth and ground-water movement would be expected.

Calcareous nodules are interpreted as caliche nodules (Gile and others, 1966; Reeves, 1976; Goudie, 1983). Root traces were probably preserved as calcareous nodules (Klappa, 1980). Conglomerates are interpreted as intraformational caliche conglomerates, which resulted from erosion and fracturing of caliche nodule zones (Allen, 1986). The lime pebbles show some rounding and sorting and indicate that some transportation occurred.

Compaction slickensides formed under continuous deposition and compaction of clay in a body of water. Flocculated clays were subjected to their own weight and that of the overlying, continually accumulating sediments. As compaction continued, synaeresis cracks began to close by plastic flow, as one side of a crack moved against the other, and resulted in preferred orientation of the clay minerals and the slick surface of the slickensides (White, 1961).

The lack of primary sedimentary structures was probably caused by a small range in grain size and little difference in sediment composition and color during deposition. In addition, deformation solution brecciation, compaction dewatering, desiccation, intense plant bioturbation, and precipitation of calcareous nodules probably destroyed primary sedimentary structures.

A pedogenic interpretation for this lithofacies is based primarily on the calcareous nodules, conglomerates, and root traces found in red mudstones, which are interpreted as caliche paleosols (Allen, 1974, 1986; Leeder, 1975). The pedogenic interpretation is

plausible because the caliche paleosols are similar in scale, profile, macrostructure, and composition to many Quaternary pedogenic caliches and carbonate-bearing soils from many parts of the world (Gile and others, 1966; Reeves, 1976; Goudie, 1983). Sturm (1982a) suggested that the production and preservation of organic material was high in the marsh environment. However, this study demonstrates that this lithofacies is not very carbonaceous. The writer disagrees with the environmental interpretations of Sturm (1982a, 1982b), because the color and lithologic characteristics of this lithofacies indicates it was deposited under subaerial conditions.

Lithofacies B

Sturm (1982a, 1982b) interpreted Lithofacies B as a marsh and swamp deposit. Ziebarth (1962) interpreted thin coal beds associated with shales as a swamp deposit. The medium-gray to medium-dark-gray, carbonaceous claystone and overlying bituminous coal of lithofacies B are interpreted as root-filled clays (underclay) and peat deposited in backswamp areas on a flood plain (Cant, 1982; Walker and Cant, 1984; Collinson, 1986) (Fig. 62). The major deposits in the backswamp environment consist of coal and carbonaceous claystone, which were derived from clay and silt mixed with varying proportions of organic material. Deposition in this environment was solely the result of overbank flow during high river stages and the accumulation of organic material in backswamps.

Calcareous nodules are commonly associated with root systems in fine-grained rocks below coal seams (Huddle and Patterson, 1961; Wilson, 1965; Retallack, 1976, 1977). Root systems in the underclay

were probably preserved as root traces and calcareous nodules (Huddle and Patterson, 1961; Wilson, 1965; Retallack, 1976, 1977; Klappa, 1980). Intense slickensiding may have resulted from the collapse and compaction of root systems in the underclay (Huddle and Patterson, 1961). Coals record prolific plant growth and preservation of organic matter as peat by acidic and reducing ground water associated with a high water table (Collinson, 1986). Pyrite in the claystone and coal indicates that reducing conditions were present during deposition of this lithofacies (Berner, 1964). The writer agrees with the environmental interpretations of Sturm and Ziebarth for this lithofacies.

Lithofacies C

Sturm (1982a, 1982b) interpreted Lithofacies C as an interdistributary-bay deposit on a delta platform. The dark-gray to black shale and medium-dark-gray to dark-gray limestone of lithofacies C are interpreted as flood-plain (Cant, 1982; Walker and Cant, 1984; Collinson, 1986) and estuary deposits (Clifton, 1982; Reinson, 1984; Elliot, 1986) (Fig. 62). In addition, lacustrine environments developed by compaction and subsidence of fine-grained sediment on the flood plain (Cant, 1982; Walker and Cant, 1984; Collinson, 1986). The flood-plain deposits graded laterally into river channel-levee deposits. Deposition in these environments was solely the result of overbank flow during high river stages and the accumulation of carbonate in estuaries and lakes. Sediments were composed primarily of clay, silt, and carbonate.

Paleontologic evidence indicates that a range from fresh-water through brackish-water to marine conditions existed on the flood plain and in the estuaries (Grenda, 1977). The flood plain and associated lakes sustained fresh- to brackish-water pelecypods and ostracods. Marine estuaries, which developed by transgression of a nearby epeiric sea and flooding of river channels and flood plains, sustained marine invertebrates. Thin, argillaceous limestones were deposited in marine estuaries or fresh- to brackish-water lakes.

Reworked plant remains from backswamps were incorporated into the flood-plain, estuary, and lake sediments. Well-preserved fossils, finely laminated shales and limestones, carbonaceous matter and plant fragments on bedding planes suggest that flood-plain waters, estuaries, and lakes were relatively shallow and calm. The lack of bioturbation, the presence of pyrite and the dark-gray to black color of this lithofacies suggests that bottom waters were anoxic and that reducing conditions existed at different times in the bottom sediments (Demaison and Moore, 1980). The environmental interpretation of this lithofacies by Sturm is probably correct if a delta was present in southwestern North Dakota.

Lithofacies D

In early literature, this sandstone was interpreted as a nonmarine, channel-fill deposit (Ziebarth, 1962, 1964), marine, beach-bar complex (Ziebarth, 1964), or offshore-bar deposit (Harris, 1958; Willis, 1959; Ziebarth, 1962). In more recent literature, Sturm (1982a, 1982b, 1983, 1987) interpreted this sandstone as a channel-fill deposit. The multiply-stacked, large-scale crossbedded, fining-

upward sequence of texturally immature quartzarenite in Lithofacies D, is interpreted as a river-channel deposit (Cant, 1982; Walker and Cant, 1984; Collinson, 1986) (Fig. 62). The presence of basal conglomerates and lenticular mud pebbles aligned parallel to bedding planes indicates that this sandstone was deposited as a river channel (Cant, 1982; Walker and Cant, 1984; Collinson, 1986) (Fig. 62). Coarse sand and mud pebbles were deposited near the base of the channel floor as channel lag, in areas of maximum velocity and turbulence. The basal conglomerates are composed of mud and bituminous coal pebbles, indicating that rivers migrated laterally over flood-plain and backswamp environments. Fine- to medium-grained sand was deposited by lateral accretion on point bars or sand bars in relatively shallow water associated with areas of low velocity and turbulence.

Sandstone trends (Plate 3) indicate that river channels flowed from the northeast toward the southwest. Lateral migration of high-sinuosity river channels or anastomosing river channels deposited thick and persistent vertical accretion deposits (Lithofacies A-C). This sandstone was not deposited as a beach or offshore bar, as indicated by its texturally immature character.

Lithofacies E

The grayish-red, poorly sorted, quartzarenite of lithofacies E, which Sturm (1982a, 1982b, 1987) interpreted as a delta-front sandstone and barrier-island sandstone (Sturm, 1987), in southwestern North Dakota was not identified in northwestern North Dakota. Sturm (1982a, 1982b, 1987) based his interpretation of this lithofacies on

sandstone geometry and textural maturity. He did not identify any delta-front subenvironments, such as the prodelta, lower and upper shoreface, and foreshore. This sandstone's relatively thin and lenticular character in southwestern North Dakota indicates it was probably deposited under restricted conditions. Sturm (1982a) suggested that the delta-front area was starved of sediment, or that tidal processes transported sediment seaward. Ziebarth (1964) suggested that this sandstone was subjected to subaerial erosion or was deposited under subaerial conditions to explain the hematitic nature of this sandstone. The writer agrees with Ziebarth that this sandstone was subjected to subaerial erosion or deposited under subaerial conditions.

Upper Unit Lithofacies

Since the upper unit was not identified in northwestern North Dakota, the paleoenvironmental interpretations of Sturm (1982a, 1982b, 1983, 1987) will be used. Unfortunately, Sturm (1982a, 1982b) did not provide a contour map showing the distribution of the upper unit north of Township 140N. The writer believes that the upper unit, composed predominantly of a marine limestone (Lithofacies G), pinches out northward in southwestern North Dakota and is not as persistent and does not extend as far north as Sturm indicated (Plate 1 A-A'). The part of the Tyler sea which deposited thick limestones did not transgress far enough north. Knowledge of the distribution of the upper unit in southwestern North Dakota may illustrate more clearly the depositional processes which operated during deposition of the Tyler Formation.

By observing the stratigraphy in detail, Ziebarth (1962, 1964) interpreted Lithofacies F as a marine, beach-bar complex or nonmarine, channel-fill deposit (Ziebarth, 1964) and Land (1976, 1979) and Sturm (1982a, 1982b, 1983, 1987) interpreted lithofacies F as barrier-island sandstones deposited along regressive shorelines. The boundaries of the Medora, Fryburg, Green River, Zenith, South Heart, and Dickinson oil fields, Billings and Stark Counties, southwestern North Dakota, are related to the distribution of this sandstone (Ziebarth, 1962, 1964; Land, 1976, 1979; Sturm, 1982a, 1982b, 1983, 1987). Land recognized lithologies indicative of five subenvironments of deposition. In ascending order these environments are: 1) shale and mudstone (shallow-neritic), 2) very fine- to fine-grained, crossbedded sandstone (lower-shoreface), 3) fine- to medium-grained, crossbedded sandstone (upper-shoreface), 4) fine- to medium-grained, massive sandstone (foreshore), and 5) coal (marsh). On the basis of lithology and sedimentary structures, lithofacies F is interpreted as a marine sandstone deposited on a shoreline.

By examining the stratigraphy closely, Sturm (1982a, 1982b, 1983, 1987) interpreted the limestones and shales of lithofacies G as shallow-marine to marginal-marine environments deposited in an anoxic sea in front of the barrier islands (Lithofacies F) and lagoonal-estuarine environments deposited behind the barrier islands (Lithofacies F). The limestones and shales of lithofacies G are interpreted as shallow-marine and lagoon deposits, respectively.

By examining the stratigraphy in detail, Sturm (1982a, 1982b, 1983, 1987) interpreted lithofacies H as a prograding tidal-flat and

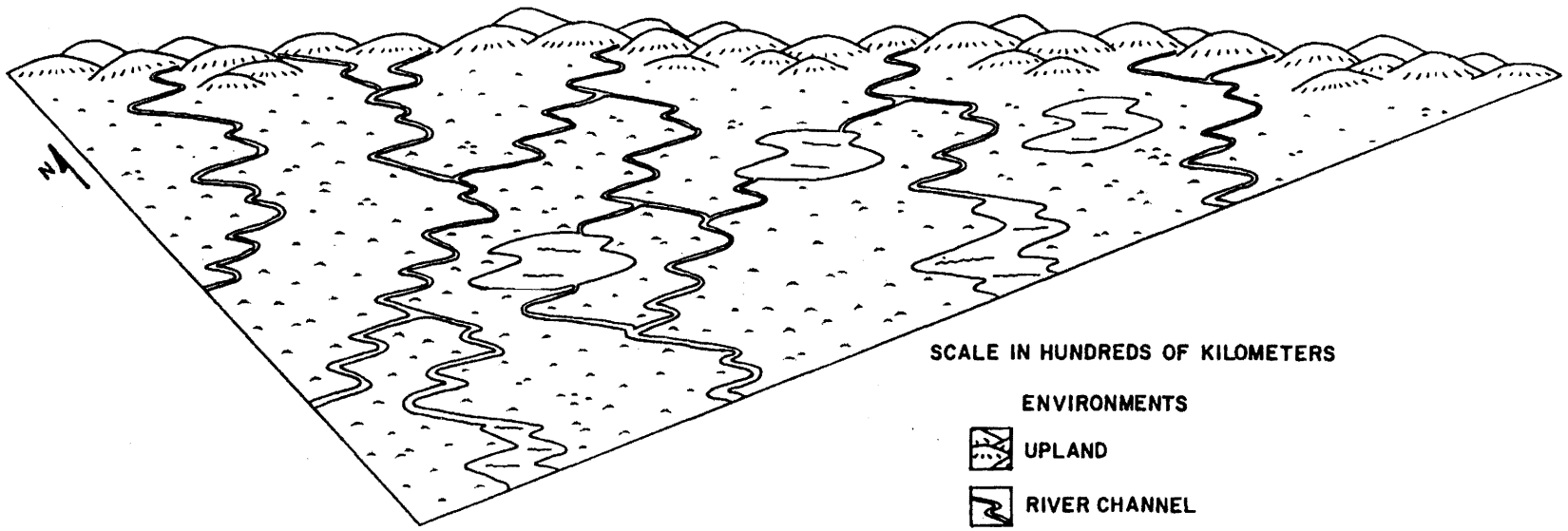
back-marsh environment. Based on lithology and stratigraphic position, lithofacies H is interpreted as a prograding tidal-flat environment.

Depositional History of the Tyler Formation

The Tyler Formation in northwestern North Dakota was deposited as a river channel system on a low-lying coastal plain (Fig. 63). Throughout deposition of the Tyler Formation, several major river channels flowed in a predominantly southwest direction across a low-lying coastal plain and transported quartz sand, most likely toward a delta or shoreline at the margin of a shallow epeiric sea. The final site of deposition of the sand was not identified in northwestern North Dakota, but it is presumed to be in southwestern North Dakota (Ziebarth, 1962, 1964; Land, 1976, 1979; Sturm, 1982a, 1982b, 1983, 1987) or Montana.

The prominent stratigraphic sequence of lithofacies A-B-C indicates a transgressive-regressive cycle projected on an overall prograding coastal plain sequence. Initially, as sea level rose, base level rose resulting in flooding of river channels and deposition of flood-plain and estuary deposits (Lithofacies C). Interbedded shales and limestones (Lithofacies C) containing fresh- to brackish-water and marine invertebrates demonstrate that sea-level fluctuation was an important process on the coastal plain. On the low-lying coastal plain, a rise in sea level resulted in the flooding of a very large area. A relatively small tidal range on the coastal plain produced estuaries characterized by a highly stratified circulation pattern and

Figure 63 - Paleogeographic reconstruction of the depositional environments during deposition of the Tyler Formation in northwestern North Dakota.


N
SCALE IN HUNDREDS OF KILOMETERS
ENVIRONMENTS
UPLAND
RIVER CHANNEL
ESTUARY OR LAKE
COASTAL PLAIN, INCLUDES FLOOD PLAINS, PALEOSOLS, AND BACKSWAMPS

anoxic conditions over a large area. Consequently, a rise in the water table provided conditions which were optimum for the production and preservation of carbonaceous clay and peat in backswamps (Lithofacies B). Eventually, sea level dropped and exposed large tracts of flood-plain deposits (Lithofacies C) to soil formation processes (Lithofacies A). On the low-lying coastal plain, when the rivers were flowing close to their base level, parts of the flood plain (Lithofacies C) never dried out and developed anoxic conditions over a large area. In northwestern North Dakota, Tyler time culminated with progradation of the coastal plain and transgression of the Amsden sea.

Sturm (1987) suggested that the lower unit of the Tyler Formation in southwestern North Dakota was deposited in an anoxic silled basin created by the northwest-southeast-trending Cedar Creek Anticline. A possible reason for the anoxic conditions in the Tyler basin in northwestern North Dakota was also the Cedar Creek Anticline as suggested by Sturm.

Based on very sparse well control, Sturm (1982a, 1982b, 1987) suggested that stream channel trends, which coincide with northwest-southeast linear trends of a relatively thick lower unit in the Tyler Formation in southwestern North Dakota, were related to movement of basement-block faults in the Williston Basin. However, in this study linear trends of any orientation, which would have accompanied relatively thick river-channel sandstones, were not detected in northwestern North Dakota (Plates 2 and 3).

However, this study indicates that the river channel trends in northwestern North Dakota may be controlled by movement of basement-block faults in the Williston Basin. River-channel sandstone trends (Plate 3) coincide with northeast-southwest structural lineaments identified by Thomas (1974) (Fig. 64). Continuous subsidence during lineament development due to basement-block faulting would explain linear trends of relatively thick river-channel sandstones (Plate 3). High-sinuosity or anastomosing river channels are inferred because of the thick and persistent flood-plain deposits (Lithofacies A-C).

Diagenetic Environment and History of Tyler Sandstones

Physical and chemical diagenetic processes affected the composition and texture of Tyler sandstones in many ways. A study of diagenesis can help explain the relationship between porosity and permeability and cementation and authigenic clay minerals. In addition, diagenesis can be used to construct a post-depositional geological environment and history of Tyler sandstones. During burial, physical compaction reduced primary porosity by reorientation and repacking of brittle detrital grains and deformation of ductile detrital grains.

Studying sandstone diagenesis requires a basic understanding of the hydrogeologic regimes in basins and fluid geochemistries which evolve through time. Initially, sediments were flushed with meteoric ground water or connate water (Galloway, 1984) (Fig. 65). During burial, sands were flushed with chemically evolved pore water released after diagenesis and compaction of interbedded mud-rich sequences as

Figure 64 - Northeast-southwest-trending structural lineaments in North Dakota, Montana, and South Dakota. After Thomas (1974).

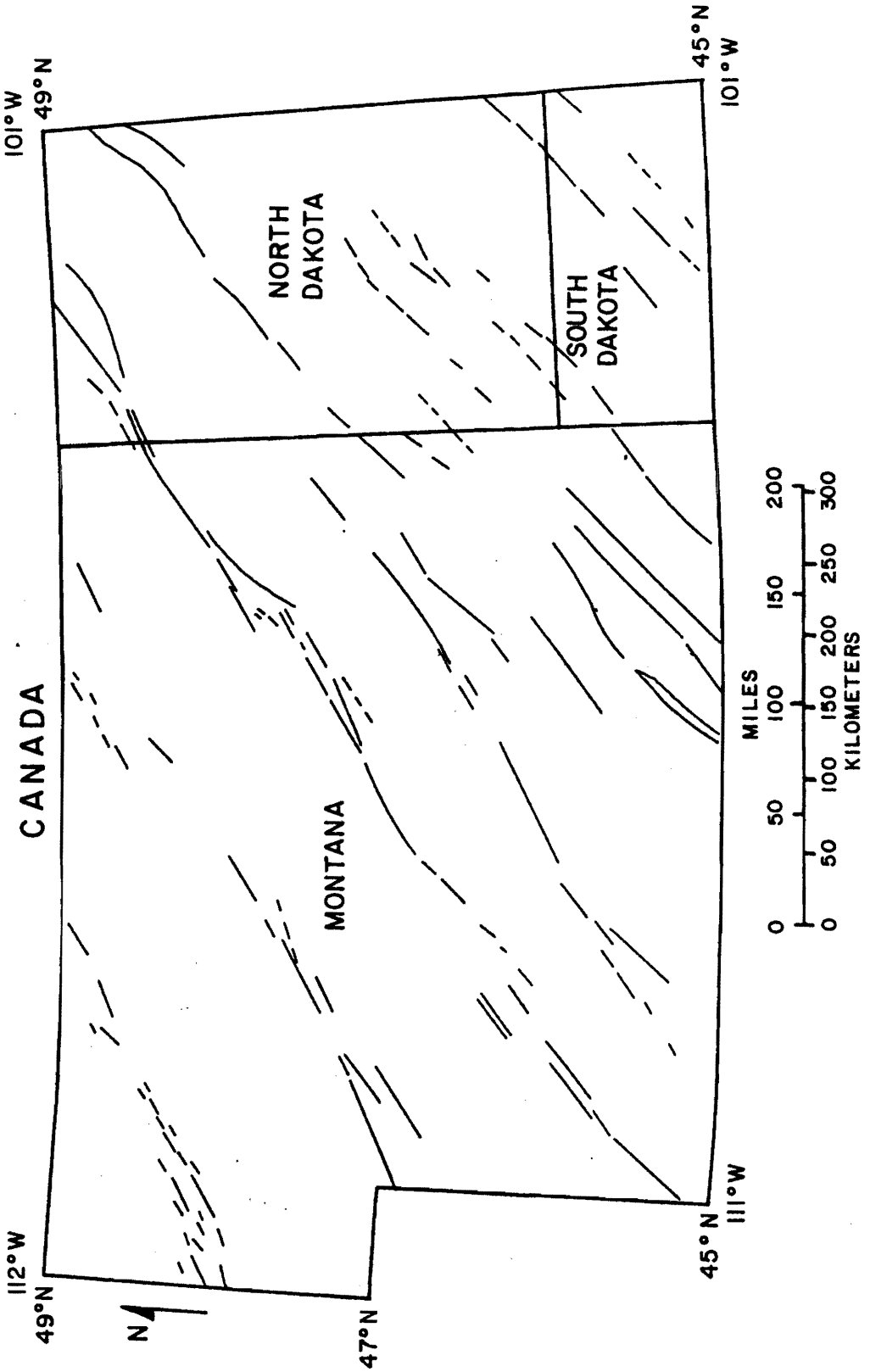
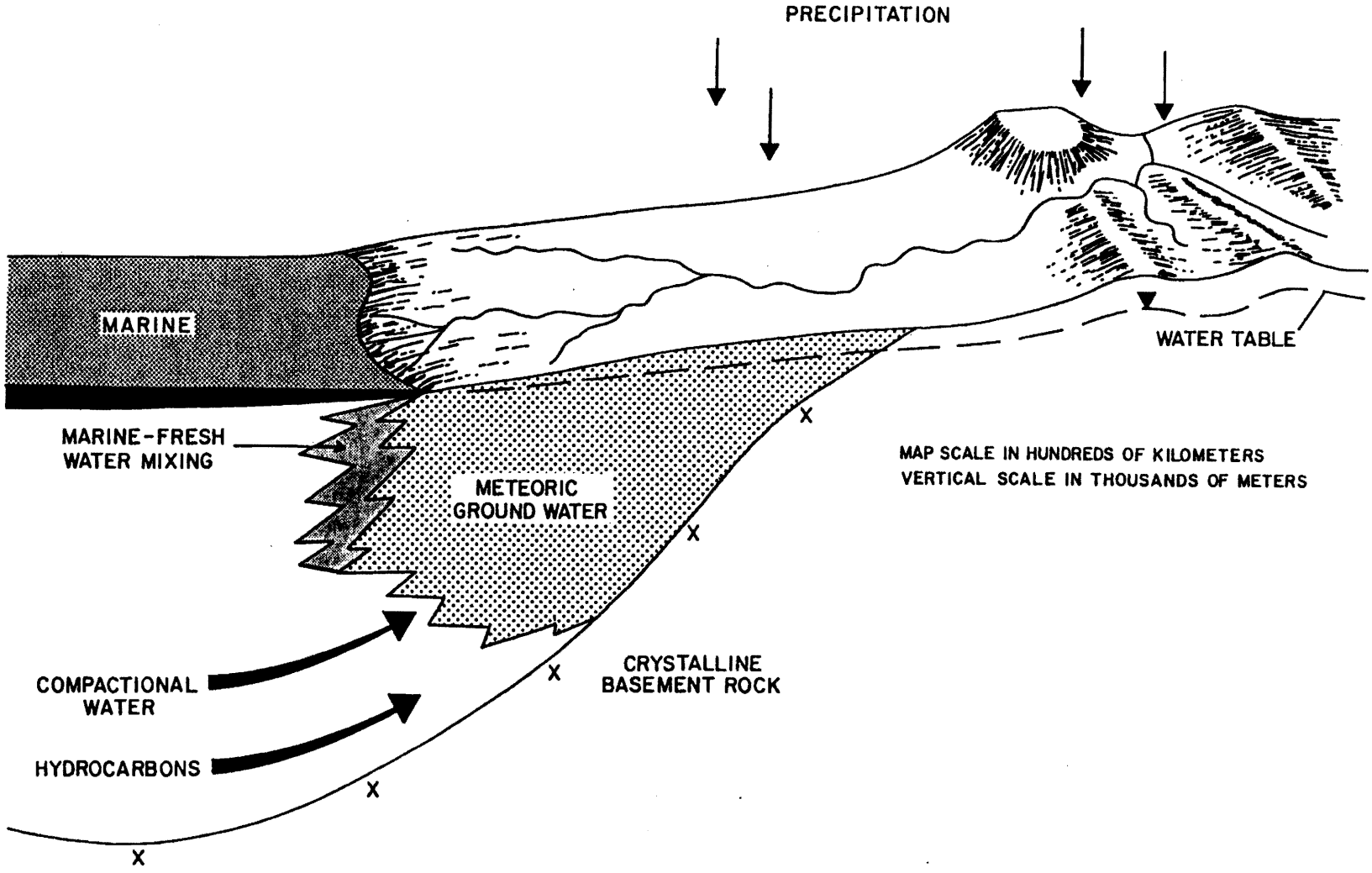

101°W
49°N
45°N
101°W
NORTH DAKOTA
SOUTH DAKOTA
CANADA
MONTANA
MILES
0 50 100 150 200
KILOMETERS
0 50 100 150 200 250 300
112°W
49°N
N
47°N
45°N
111°W

Figure 65 - Simplified model of the hydrogeologic regimes representing different diagenetic environments in a general basin.


PRECIPITATION
MARINE
WATER TABLE
MARINE-FRESH
WATER MIXING
METEORIC
GROUND WATER
MAP SCALE IN HUNDREDS OF KILOMETERS
VERTICAL SCALE IN THOUSANDS OF METERS
COMPACTIONAL
WATER
CRYSTALLINE
BASEMENT ROCK
HYDROCARBONS

part of a general geochemical evolutionary processes that these sediments went through (Siever, 1968; Garrels and others, 1972; Hower and others, 1976; Galloway, 1984) (Fig. 65). Continuous burial resulted in increased pressure and temperature and maturation of hydrocarbon liquids and gases in shale and migration into interbedded sandstone (Fig. 65).

In discussing the timing of diagenetic events, "early" and "late" are differentiated in a simple way (Pettijohn and others, 1987). "Early" refers to those changes which took place within a few thousands to hundreds of thousands of years (Fig. 66), presumably while the sand was still buried at a rather shallow depth, from a few tens of meters to a few hundred meters. "Late" refers to all later events (Fig. 66). Differentiating between early and late emphasizes the differences between the rapid initial processes of compaction and lithification and the slower changes which occurred later and over a longer time scale.

Initially, the presence of detrital clay and infiltration clay was the most important factor influencing porosity reduction in Tyler sandstones. Detrital clay and infiltration clay reduced the porosity and permeability, and affected cementation of Tyler sandstones. Detrital clay and infiltration clay coatings on quartz grains influenced subsequent diagenesis by promoting intergranular pressure solution (Heald, 1956; Sibley and Blatt, 1976; Houseknecht, 1988), and inhibiting quartz cementation (Cecil and Heald, 1971; Heald and Larese, 1974). In addition, detrital clay and infiltration clay were

Figure 66 - General schematic diagram of the ideal diagenetic sequence for cements and authigenic clay minerals in Tyler sandstones.

	EARLY	LATE
Cements		
Hematite	————	
Quartz overgrowths	————	
Carbonate	Fe-Poor ————	Fe-Rich ————
Sulfate	————	
Pyrite	————	————
Amorphous silica (opal)	————	————
Authigenic Clay Minerals		
Chlorite coatings	————	
Kaolinite	————	
Illite		————
Chlorite		————

subjected to recrystallization, transformation, or regeneration and acted as nucleation sites for authigenic clay minerals.

The first major diagenetic event responsible for porosity reduction was the development of authigenic quartz overgrowths. Authigenic quartz overgrowths formed early when silica was precipitated from supersaturated meteoric ground water (Figs. 65 and 66). The source of the dissolve silica in the meteoric ground water was probably from weathering of silicates and clay minerals from interbedded sediments and in outcrop areas (Siever, 1957, 1962; Towe, 1962). Siever (1959), Sibley and Blatt (1976), and Blatt (1979) suggested that complete quartz cementation of a sand can be accomplished by precipitation of silica from supersaturated meteoric ground water (Fig. 65) if sufficient pore volumes of ground water can be moved through the sand.

In addition, there are other possible nearby sources of dissolved silica in the Tyler Formation. Biogenic silica may have been a source of dissolved silica (Siever and others, 1965; Hurd, 1972); however, there are no siliceous organism remains in the Tyler Formation. The weathering of silicate and clay minerals probably accounted for some of the dissolved silica. The weathering of feldspars, amphiboles, pyroxenes, and other silicates which weather rapidly, produced excess dissolved silica (Siever, 1957). The alteration of silica-rich smectite to illite and chlorite also produced excess dissolved silica (Siever, 1957, 1962; Towe, 1962).

Although all of these sources of silica existed in these sandstones, the silica sources were even more abundant in finer-

grained sediments. For example, Phillip and others (1963) and Fuchtbauer (1967) showed how quartz cementation in a sandstone increased towards the shaly margin of the bed and attributed it to infiltration of silica-rich water from the shale into the sandstone. However, Hower and others (1976) suggested that mudrocks act as a closed system with respect to silica migration during clay mineral diagenesis. Blatt (1979) and Bjorlykke (1988) argued on the basis of quantitative estimates that mudrocks cannot account for more than a few percent of silica cement.

In addition, authigenic quartz overgrowths may have formed by intergranular pressure solution of quartz grains at point contacts and reprecipitation of the dissolved silica within these sandstones as a pore cement (Heald, 1956; Weyl, 1959). Some authors (Heald, 1956; Sibley and Blatt, 1976; Houseknecht, 1988) observed the importance of clay films in promoting intergranular pressure solution. Tada and others (1987) concluded that plastic deformation plus free-face pressure solution is more likely responsible for intergranular pressure solution in porous quartz sandstone than the water film diffusion mechanism proposed by Weyl (1959). Some authors believe that intergranular pressure solution significantly reduces the porosity of sandstones (Heald, 1956; James and others, 1986; Houseknecht, 1984, 1988), while others conclude that it is of minor importance in comparison to quartz cementation from silica-supersaturated meteoric ground water (Siever, 1959; Sibley and Blatt, 1976; Blatt, 1979).

The presence of detrital clay, infiltration clay, and early hematite coatings on quartz grains (Fig. 66) probably inhibited authigenic quartz overgrowths and preserved primary porosity (Cecil and Heald, 1971; Heald and Larese, 1974). Walker (1967, 1974) and Walker and others (1978) have argued for the in-place weathering of iron-rich silicates by meteoric ground water (Fig. 65) as a major source of red and yellow hematite pigment.

The relative timing relationship between amorphous silica (opal) and other authigenic cements, except authigenic quartz overgrowths, is impossible to determine (Figs. 66). The calcium and chlorine in the amorphous silica are impurities, which formed the salt, $CaCl_2$. The presence of amorphous silica at such burial depths (7,500-8,200 feet), and presumably at elevated temperatures and pressures associated with hydrocarbon maturation and migration, raises many questions. For example, what kept the amorphous silica from transforming into quartz as suggested by the generalized diagenetic sequence: Opal-A → Opal-CT → Quartz? Is transformation proceeding at the present time? In addition, what exactly are the controls on silica solubility? Because of the relatively rapid precipitation of amorphous silica, pore waters were not stable for a long time and were not transported over long distances without precipitating amorphous silica (Pettijohn and others, 1987). Therefore, the silica source was nearby. Perhaps, slowly rising and cooling, chemically evolved, silica-rich pore water, concentrated with calcium and chlorine (Fig. 65) precipitated amorphous silica. The writer believes that Sturm (1982a, 1982b) mistakenly identified a great deal of amorphous

silica as detrital clay coatings on quartz grains. This is possible, because the amorphous silica resembles a clay coating on quartz grains. However, it is possible that some of the material coating quartz grains is detrital clay.

After precipitation of authigenic quartz overgrowths, calcite cement precipitated (Fig. 66) from calcium carbonate-supersaturated water. The presence of poikilotopic texture in Tyler sandstones indicates that calcite cementation took place early (Fig. 66), near the surface before much burial and compaction. Calcite cement in marine sandstones in Lithofacies E could have formed shortly after deposition in a marine environment (Bathurst, 1975; Longman, 1980) (Fig. 65). Calcite cement in marine sandstones in Lithofacies F which grade laterally and vertically into quartz sand wackestone could have also formed shortly after deposition in a marine environment (Bathurst, 1975; Longman, 1980) (Fig. 65).

In addition, calcite cement could have precipitated from meteoric ground water if sufficient pore volumes of water can be moved through the sand (Longstaffe, 1984) (Fig. 65). The source of the calcium carbonate may have been dissolution of calcareous material in interbedded sediments and outcrop areas by carbonic acid, which was derived from meteoric and biogenic carbon dioxide (Schmidt and McDonald, 1979). Calcite cement could also precipitate in a marine-fresh water mixing zone (Longman, 1980) (Fig. 65).

In addition, calcite cement may form in shallow sandstones by precipitation from upward migrating pore waters (Fig 65). The source of the calcium carbonate may have been dissolution of calcareous

material in interbedded sediments by carbonic acid, which was derived from decarboxylation of maturing organic matter in interbedded carbonaceous shales (Lithofacies C and Lithofacies G) (Schmidt and McDonald, 1979). Tyler sediments contain a number of nearby sources of calcium carbonate. Sandstones in Lithofacies D grade laterally and vertically into calcareous shales in Lithofacies C. Calcareous ostracods are abundant in sandstones in Lithofacies E. Sandstones in Lithofacies E grade laterally and vertically into calcareous mudstone in Lithofacies A. Sandstones in Lithofacies F grade laterally and vertically into limestone and calcareous shale in Lithofacies C and Lithofacies G.

Dissolution of calcite cement by carbonic acid, which was derived from meteoric and biogenic carbon dioxide produced secondary porosity in Tyler sandstones (Schmidt and McDonald, 1979). Some of the dissolved calcium carbonate may have reprecipitated in the sandstone.

Following precipitation of calcite cement, chemically evolved pore water containing iron, magnesium, and manganese (Fig. 65) probably altered calcite to ankerite or precipitated ankerite and siderite from solution in primary and/or secondary porosity (Boles, 1978). Magnesium and iron became less hydrated with increasing depth and temperature and precipitated ankerite and siderite (Usdowski, 1968). Therefore, ankerite and siderite were late diagenetic, iron-rich carbonate cements (Fig. 66). The magnesium and iron required for ankerite and siderite cement was probably derived from the conversion of detrital smectite to authigenic illite (Boles, 1978).

Dissolution of carbonate cements by carbonic acid, which was derived from decarboxylation of maturing organic matter in interbedded carbonaceous shales (Lithofacies C and Lithofacies G), produced secondary porosity in Tyler sandstones (Schmidt and McDonald, 1979). Some of the dissolved calcium carbonate may have reprecipitated in the sandstone or in shallower sandstones.

After precipitation of carbonate cements, hydrous calcium sulfate (gypsum) and hydrous barium sulfate (Fig. 66), precipitated from evaporative fluids in primary and/or secondary porosity (Murray, 1964). The presence of poikilotopic texture in Tyler sandstones indicates that sulfate cementation took place early, near the surface before much burial and compaction. The evaporative fluids may have originated from hypersaline lakes (Fig. 65) or dissolution of overlying evaporite deposits (Murray, 1964). Subsequent burial of the sediment resulted in the recrystallization of gypsum and hydrous barium sulfate to anhydrite and barite, respectively (Murray, 1964). Sturm (1982a, 1982b) did not report the presence of barite in Tyler sandstones. Little information is known on the geologic distribution of barite in sandstones and the geochemical environment in which it forms.

The formation of authigenic clay minerals took place in different diagenetic environments (Fig. 65) at different times (Fig. 66). Clay minerals formed authigenically in these sandstones as a direct precipitate from formation waters (neoformation) and through reactions between detrital grains or clay minerals and formation waters (recrystallization, transformation, or regeneration).

The relative lack of unstable detrital grains in Tyler sandstones suggests that the majority of authigenic clay minerals were precipitated from solution in primary and/or secondary porosity. Kaolinite was the first authigenic clay mineral to precipitate from solution in Tyler sandstones (Fig. 66). Shelton (1964), Blatt (1979), Longstaffe (1984), and Pettijohn and others (1987) have suggested that authigenic kaolinite can form in meteoric ground water (Fig. 65).

It is difficult to determine whether illite or chlorite precipitated from solution first in Tyler sandstones (Fig. 66). The formation of a stable clay mineral assemblage of illite and chlorite in primary and/or secondary porosity, which is a function of the duration and depth of burial, took place in chemically evolved pore water which contained potassium, magnesium, and iron (Siever, 1968; Garrels and others, 1972; Hower and others, 1976) (Fig. 65). Early authigenic chlorite (Fig. 66) coatings on quartz grains probably inhibited authigenic quartz overgrowths and preserved primary porosity (Cecil and Heald, 1971; Heald and Larese, 1974). The iron required for precipitation of chlorite coatings probably came from the in-place weathering of iron-rich silicates by meteoric ground water (Walker and others, 1978) (Fig. 65).

Transformation of detrital grains and clay minerals, especially detrital clays, probably resulted in various authigenic clay minerals. Kaolinization and illitization of feldspar grains and rock fragments (Millot, 1970; Pettijohn and others, 1987) and chloritization of ferromagnesian rock fragments (Millot, 1970) is related to weathering conditions and dependent on meteoric ground water chemistry (Fig. 65).

The large volume of authigenic kaolinite in detrital clay-rich Tyler sandstones indicates that the kaolinite was probably recrystallized from detrital clay. In addition, the presence of authigenic kaolinite, illite, and chlorite in the same pore indicates that clay mineral transformations have occurred in Tyler sandstones. The most common clay mineral transformations occurred within the three-layer clay minerals (e.g. illite ↔ chlorite, illite ↔ smectite, and chlorite ↔ vermiculite). Transformation between two layered kaolinitic clay minerals were less likely to occur (e.g. kaolinite ↔ halloysite ↔ disordered kaolinites). The transformation from a two-layer clay mineral to a three-layer clay mineral probably also occurred (e.g. kaolinite ↔ illite) (Millot, 1970). Transformation by removal of chemical elements from a clay mineral was related to weathering conditions and dependent on meteoric ground water chemistry (Millot, 1970) (Fig. 65), while transformation by addition of chemical elements to a clay mineral took place in chemically evolved pore water during burial (Siever, 1968; Millot, 1970; Garrels and others, 1972; Hower and others, 1976) (Fig. 65).

The presence of pyrite in these sandstones indicates reducing conditions, and reflects a deoxygenated environment (Berner, 1964). The replacement of sulfate by pyrite indicates a change from oxidizing to reducing conditions. Precipitation of pyrite probably took place early (Fig. 66), near the surface, in association with a restricted pond or lagoon (Berner, 1964), or in chemically evolved pore water during burial (Siever, 1968; Garrels and others, 1972; Hower and others, 1976) (Fig. 65).

Kastner and Siever (1979) suggested a mass transfer or exchange reservoir model for precipitation of authigenic feldspar overgrowths in sandstones involving substitution or mixing of two fluids of different composition from one reservoir to another. Precipitation of authigenic feldspar took place in chemically evolved pore water during burial (Siever, 1968; Garrels and others, 1972; Hower and others, 1976) (Fig. 65).

Sandstone Reservoir Properties

Tyler sandstones contain intergranular porosity which can be related to the lithofacies. For example, Lithofacies E, interpreted as delta-front sandstones (Sturm, 1982a, 1982b) and barrier-island sandstones (Sturm, 1987), contains no appreciable porosity. Almost all of the porosity was filled by detrital and authigenic clay minerals, authigenic quartz overgrowths, hematite, carbonate, and sulfate.

On the other hand, Lithofacies D and Lithofacies F, interpreted as river-channel sandstones and barrier-island sandstones (Land, 1976, 1979; Sturm, 1982a, 1982b, 1983, 1987), respectively, have considerable porosity. Petroliferous river-channel sandstones (Lithofacies D) in southwestern North Dakota are fine- to medium-grained, well-sorted, texturally mature, quartzarenites. The absence of detrital clay in petroliferous sandstones was probably related to changes in river velocity and competency resulting in winnowing of the clay from the sediment or deposition of the clay either upstream or downstream. Non-petroliferous sandstones in southwestern North Dakota, which are fine-to coarse-grained, texturally immature, clay-

rich quartzarenites are interpreted to have been rapidly deposited on the channel floor or as thalweg deposits. Petroliferous sandstones are interpreted to have been deposited in shallower parts of the river, presumably on the upper part of point bars in a meandering river. Petroliferous sandstones may also be the top of sand bars in a braided river. Detrital clay was winnowed out of the top of sand bars by river flow at high stages, leaving a fine- to medium-grained, well-sorted, quartz sand.

Petroliferous barrier-island sandstones (Lithofacies F) in southwestern North Dakota are fine-to medium-grained, well-sorted, texturally mature, quartzarenites. These petroliferous sandstones are interpreted to have been deposited in the foreshore area. Detrital clays were winnowed out of sands by the constant swash and backwash of waves breaking on the foreshore area, resulting in fine- to medium-grained, well-sorted, quartz sand. Non-petroliferous sandstones in southwestern North Dakota, which are very fine- to medium-grained, texturally immature, clay-rich quartzarenites are interpreted to have been deposited in the lower shoreface area where silt and clay were incorporated into moderately sorted sand.

The question remains as to what inhibited porous sandstones from being cemented like other sandstones. The presence of impermeable shale laminae acted as a barrier to the solutions required for the precipitation of cements and authigenic clay minerals. The amorphous silica (opal), precipitated after authigenic quartz overgrowths, may have inhibited the precipitation of other cements and authigenic clay minerals. The detrital clay, infiltration clay, and early hematite

and chlorite that coated quartz grains inhibited authigenic quartz overgrowths and preserved primary porosity. The lack of rock fragments and detrital clay reduced the chance for recrystallization, transformation, or regeneration of authigenic clay minerals. In addition, much of the porosity was probably produced by dissolution of carbonate cements.

This study is concerned primarily with the petroleum geology of the Tyler Formation in northwestern North Dakota, and there is no oil production from the Tyler Formation north of Township 148N. Generally, river-channel sandstones in northwestern North Dakota are water-saturated. Apparently, where wells have been drilled oil was never generated or the oil migrated updip through the sandstone. An oil accumulation requires a source, reservoir, seal, and trapping mechanism. The Tyler Formation contains impermeable organic-rich shales and porous river-channel sandstones. The Nesson Anticline and Antelope Anticline are excellent trapping mechanisms. A logical location for an oil well is on the Nesson Anticline and Antelope Anticline where thick river-channel sandstones occur. However, these areas have been drilled and do not contain Tyler production. In addition, thick river-channel sandstones may constitute stratigraphic traps and provide an excellent location for oil wells.

PROBLEMS DESERVING FURTHER STUDY

As with any scientific endeavor, this study probably resulted in more questions than answers. For example, were black shales in the Tyler Formation in northwestern North Dakota subjected to thermal maturation required to generate hydrocarbons? Dow (1974) suggested that some of the black shale in northwestern North Dakota were exposed to sufficient thermal energy to generate and expel hydrocarbons. Geochemical analysis of black shale in the Tyler Formation in northwestern North Dakota should receive further attention.

A contour map of the upper unit should be constructed in southwestern North Dakota to illustrate more clearly the depositional processes which operated during deposition of the Tyler Formation. Knowledge of the location of organic-rich, dark-gray to black limestone and shale in the upper unit may have importance in oil exploration in southwestern North Dakota.

The presence of amorphous silica (opal) in porous Tyler sandstones raises many questions. For example, what is the source of this material? In addition, is this material limited to porous sandstones and therefore petroliferous sandstones? There may be a relationship between the presence of amorphous silica and hydrocarbons.

Lastly, diagenesis in Tyler sandstones should be examined with trace elements, cathodoluminescence, fluid inclusions, and stable isotopes. These techniques would be helpful to better determine the conditions in which cements and authigenic clay minerals formed and the relative age of different cements and authigenic clay minerals.

CONCLUSIONS

The following conclusions have been reached about the Tyler Formation in northwestern North Dakota:

1. The Tyler Formation in northwestern North Dakota is correlative with the lower unit of the Tyler Formation in southwestern North Dakota. The upper unit of the Tyler Formation in southwestern North Dakota is not present in northwestern North Dakota, contrary to previous workers suggestions. The depositional environments of the Tyler Formation in northwestern North Dakota were interpreted from thirty-three oil well cores and approximately 3,100 oil well logs. Sandstone diagenesis in the Tyler Formation was characterized from ninety thin-sections. In addition, twenty-nine sandstone samples were analyzed by scanning electron microscope/X-ray microanalysis techniques.

2. Lenticular sandstones present in the middle and rarely at the base of the Tyler Formation occur in northeast-southwest linear trends in northwestern North Dakota.

3. The Tyler Formation in northwestern North Dakota was deposited as a river channel system on a low-lying, prograding coastal plain. Depositional environments associated with the coastal plain include river channels, flood plains, lakes, estuaries, caliche paleosols, and backswamps. Throughout deposition of the Tyler Formation, several major river channels flowed in a predominantly southwest direction across a low-lying coastal plain and transported quartz sand toward a delta or shoreline, not identified in this study, at the margin of a shallow epeiric sea.

4. The position of river channels coincide with northeast-southwest trending structural lineaments in North Dakota, which may be related to basement-block faults in the Williston Basin.

5. Tyler time culminated with progradation of the coastal plain and transgression of the Amsden sea.

6. Diagenesis of sandstones in the Tyler Formation is very complex. Initially, the presence of detrital clay and infiltration clay and early hematite and chlorite coatings on quartz grains was the most important factor influencing porosity reduction in Tyler sandstones. The first major diagenetic event responsible for porosity reduction was the development of authigenic quartz overgrowths. The presence of amorphous silica (opal) in Tyler sandstones raises many questions. Other cements that have contributed to porosity reduction in Tyler sandstones include calcite, ankerite, siderite, anhydrite, barite, hematite, and pyrite. In addition, authigenic kaolinite, illite, and chlorite have reduced porosity in Tyler sandstones. Dissolution of carbonate cements resulted in the formation of secondary porosity.

7. Sandstone diagenesis took place shortly after sand was deposited in a marine environment, while sediments were being flushed with meteoric ground water, and while sands were being flushed with chemically evolved pore water released after diagenesis and compaction of interbedded mud-rich sequences.

8. River-channel sandstones in northwestern and southwestern North Dakota and barrier-island sandstones present only in southwestern North Dakota contain considerable amounts of

intergranular porosity. Petroliferous sandstones in southwestern North Dakota are fine- to medium-grained, well-sorted, texturally mature quartzarenites. Preservation of porosity is related to depositional and diagenetic processes.

APPENDICES

APPENDIX A

Descriptions of Oil Well Cores and Thin-Sections

Well numbers of cores are those of the North Dakota Geological Survey and are listed in numerical order. Locations of cores are shown in Figure 5. The depths listed are those marked on the core, as feet below the Kelly Bushing (KB), and may not correspond directly to depths taken from well logs.

Well No.

1309 The Anschutz Corp. - R. S. Mathews #1, SE SW Sec. 20, T. 150 N., R. 94 W., McKenzie County, North Dakota. KB 2077

7709-21	Siltstone, olive-gray to olive-black, fissile, sandy, argillaceous, carbonaceous plant fragments, slickensides; interbedded with fine-grained sandstone.
	Thin-section (7711.8) - Siltstone, sandy, silt and fine-grained sand floating in clay matrix.
7721-24.6	Core missing
7724.6-46	Sandstone, medium-gray to light-olive-gray, climbing ripple cross-laminated and parallel laminated, deformation structures, fine-grained, moderately to well-sorted, subangular to rounded, argillaceous; interbedded with olive-gray to olive-black, claystone, silty, carbonaceous plant fragments, slickensides.
	Thin-section (7724.8) - Quartzarenite, very fine- to fine-grained, well-sorted, subangular to subrounded, quartz, carbonate, and sulfate cement.
	Thin-section (7740.5) - Quartzarenite, very fine- to fine-grained, moderately to well-sorted, subrounded to rounded, quartz cement, poor porosity.

1522 Pan American Petroleum Corp. - Lucy Fritz #2, NW SE Sec. 15, T. 137 N., R. 100 W., Billings County, North Dakota. KB 2864

8077-79	Conglomerate, mud pebbles, grades upward into dark-yellowish-brown, medium-grained sandstone.
8079-8114.2	Sandstone, light-gray to dark-yellowish-brown to dusky-yellowish-brown, planar crossbedded, fine- to medium-grained, moderately to well-sorted, subangular

to rounded, argillaceous, mud pebbles, hydrocarbon stained; interbedded with medium-dark-gray to dark-gray shale, carbonaceous plant fragments.

Thin-section (8092) - Quartzarenite, medium-grained, poorly to moderately sorted, subrounded to rounded, quartz, carbonate, siderite, ankerite, and hematite cement, authigenic clay, fair porosity.

Thin-section (8099) - Quartzarenite, fine-grained, well-sorted, subangular to rounded, quartz cement, detrital clay, authigenic clay, poor porosity.

Thin-section (8111) - Quartzarenite, fine-grained, well-sorted, subrounded to rounded, quartz cement, detrital clay, authigenic clay, good porosity.

Thin-section (8113) - Quartzarenite, very fine-grained, well-sorted, subrounded to rounded, quartz and carbonate cement, detrital clay and authigenic clay.

8114.2-15 Shale, medium-dark-gray to dark-gray, calcareous, carbonaceous plant fragments.

2667 Texaco Inc. - Mary Pace # 1, SW NW Sec. 14, T. 146 N., R. 101 W., McKenzie County, North Dakota. KB 2392

8153-57 Shale, olive-gray to olive-black, calcareous, even-parallel laminated.

8157-58.5 Lime mudstone, olive-gray to olive-black, argillaceous, pyritic, even-parallel laminated.

8158.5-62.5 Shale, dark-gray to black, silty, calcareous, pelecypods.

8162.5-66.5 Lime mudstone, medium-dark-gray to dark-gray, argillaceous, pyritic; interbedded with dark-gray to black shale, pelecypods, brachiopods.

8166.5-70 Shale, dark-gray to black, pyritic, carbonaceous plant fragments.

8170-72.5 Lime mudstone, medium-dark-gray to dark-gray, argillaceous, pyritic, pelecypods, brachiopods.

8172.5-83 Shale, dark-gray to black, silty, calcareous, pyritic, carbonaceous plant fragments; interbedded with bituminous coal laminae.

2723 Hunt Oil Co. - U. S. A. "A" # 1, SW NE Sec. 10, T. 145 N., R. 101 W., McKenzie County, North Dakota. KB 2317

8082-83	Claystone, mottled greenish-gray and grayish-purple, silty, calcareous.
8083-89	Shale, dark-gray to black, calcareous, pyritic, carbonaceous plant fragments, brachiopods.
8089-8105	Claystone, mottled greenish-gray, grayish-purple, dusky-yellow, grayish-red, and medium-gray, calcareous, anhydritic, slickensides, friable.

3072 Pan American Petroleum Corp. - U. S. A. Adah G. McCauley #2, SE SE Sec. 9, T. 137 N., R. 100 W., Billings County, North Dakota. KB 2926

8084-87.8	Claystone, grayish-red to dark-greenish-gray, slickensides.
8087.8-90	Claystone, mottled grayish-red, greenish-gray, and dusky-yellow, calcareous, light-colored, calcareous nodules, ostracods.
8090-8105.4	Lime mudstone to ostracod wackestone, medium-dark-gray to dark-gray, laminated, argillaceous, pyritic, brachiopods, pelecypods, hydrocarbon stained; interbedded with calcareous, dark-gray shale.
8105.4-10	Shale, dark-gray to black, calcareous, brachiopods; interbedded with medium-dark-gray lime mudstone.
8110-51	Shale, medium-gray to medium-dark-gray, silty, pyritic, iron oxide concretions, carbonaceous plant fragments, slickensides.
8151-54.3	Sandstone, light-gray to pale-brown, planar crossbedded, very coarse-grained, poorly sorted, subangular to subrounded, ostracods, mud pebbles.
8154.3-54.9	Conglomerate, mud pebbles, bituminous coal pebbles, quartz sand matrix supported.
8154.9-59.3	Shale, medium-dark-gray to dark-gray, silty, carbonaceous plant fragments, slickensides; interlaminated with fine-grained sandstone at the base.
8159.3-64.4	Sandstone, light-olive-gray to dark-yellowish-brown, post-depositional structures, fine-grained, well-sorted, subrounded to rounded, argillaceous,

hydrocarbon stained; interbedded with dark-gray shale laminae.

Thin-section (8163.8) - Quartzarenite, very fine- to fine-grained, well-sorted, subrounded to rounded, quartz cement, authigenic clay.

8164.4-66.3 Shale, mottled medium-gray and grayish-red.

8166.3-69 Sandstone, mottled yellowish-gray and grayish-red, planar crossbedded, fine- to coarse-grained, poorly sorted, subangular to subrounded, calcareous, argillaceous.

Thin-section (8166.5) - Quartzarenite, fine- to coarse-grained, poorly sorted, subangular to well-rounded, carbonate, ankerite, siderite, and hematite cement.

8169-71.3 Shale, mottled olive-gray and grayish-red, calcareous, slickensides, carbonaceous plant fragments; interbedded with very light-gray, fine-grained sandstone.

8171.3-73 Sandstone, very light-gray to yellowish-gray, planar crossbedded, very fine- to coarse-grained, poorly sorted, subangular to subrounded, calcareous, argillaceous, mud pebbles at base.

Thin-section (8171.5) - Quartzarenite, very fine- to coarse-grained, poorly sorted, subangular to rounded, quartz, sulfate, and carbonate cement, detrital clay, authigenic kaolinite, poor porosity.

8173-75.5 Shale, mottled medium-dark-gray and grayish-red, silty, slickensides, carbonaceous plant fragments; interbedded with fine-grained sandstone.

8175.5-8201 Sandstone, dark-greenish-gray to grayish-red, planar crossbedded, fine- to very coarse-grained, poorly sorted, angular to subrounded, argillaceous, fining upward sequence.

Thin-section (8180.5) - Quartzarenite, fine- to coarse-grained, poorly sorted, subangular to well-rounded, quartz, carbonate, and hematite cement, detrital clay, authigenic chlorite, good porosity.

Thin-section (8191) - Quartzarenite, very fine- to very coarse-grained, poorly sorted, angular to rounded, quartz and hematite cement, detrital clay, authigenic chlorite, good porosity.

Thin-section (8200.2) - Quartzarenite, fine- to coarse-grained, moderately sorted, subrounded to rounded, quartz and sulfate cement, detrital clay, fair porosity.

8201-04 Shale, medium-dark-gray to dark-gray, calcareous, pyritic, ostracods, pelecypods, pyritized fossils.

3167 Texaco, Inc. - W. Quayle #1, SE SW Sec. 31, T. 153 N., R. 95 W., McKenzie County, North Dakota. KB 2293

7290-7322 Siltstone, medium-dark-gray to dark-gray, pyritic, carbonaceous plant fragments, slickensides; interbedded with fine-grained sandstone.

Thin-section (7307) - Quartzarenite, very fine- to fine-grained, poorly to moderately sorted, angular to subrounded, quartz, carbonate, siderite, hematite, and sulfate cement, detrital clay, authigenic clay.

7322-56 Sandstone, very-light-gray to medium-gray, flaser bedded and parallel laminated, post-depositional features, very fine- to fine-rained, poorly sorted, angular to subrounded, argillaceous, pyritic, mud pebbles, carbonaceous plant fragments.

Thin-section (7327.8) - Quartzarenite, silt to fine-grained, poorly sorted, angular to subangular, carbonate, siderite, and hematite cement, authigenic kaolinite.

Thin-section (7328) - Quartzarenite, silt to fine-grained, poorly sorted, angular to subrounded, quartz, carbonate, sulfate, and hematite cement, detrital clay, authigenic clay.

Thin-section (7335.4) - Quartzarenite, silt to fine-grained, poorly sorted, subangular to subrounded, quartz, carbonate, sulfate, and hematite cement, detrital clay.

Thin-section (7348.8) - Quartzarenite, silt to fine-grained, pcorly sorted, angular to subrounded, carbonate and hematite cement, detrital clay.

7356-65 Siltstone, medium-dark-gray to dark-gray, sandy, carbonaceous plant fragments.

7365-67 Shale, black, carbonaceous plant fragments.

7367-79 Claystone, mottled grayish-red, greenish-gray, and dusky-yellow

7379-81 Shale, black, carbonaceous plant fragments.

3896 Mule Creek Oil Co. - Henry Fritz #1-4122, NE NE Sec. 22, T. 137 N., R. 100 W., Billings County, North Dakota. KB 2842

8030-45 Shale, medium-dark-gray to dark-gray and banded moderate-brown, pyritic, ostracods, pelecypods, carbonaceous plant fragments, slickensides.

8045-8100.8 Sandstone, light-gray to light-olive-gray, planar crossbedded, fine- to medium-grained, poorly to well-sorted, subangular to rounded, fining-upward sequences, calcareous, argillaceous, mud pebbles, hydrocarbon stained; interbedded with dark-gray shale. The depth from 8052.5-8069 is not cored.

Thin-section (8052) - Quartzarenite, fine-grained, well-sorted, subangular to rounded, calcite, ankerite, siderite, and hematite cement.

Thin-section (8085) - Quartzarenite, fine-grained, well-sorted, subrounded to well-rounded, quartz and carbonate cement, authigenic clay, good porosity.

Thin-section (8100.1) - Quartzarenite, fine-grained, well-sorted, rounded to well-rounded, quartz cement, authigenic clay, authigenic kaolinite,

8100.8-01.3 Conglomerate, mud pebbles, bituminous coal pebbles, quartz sand matrix supported.

8101.3-09.5 Shale, dark-gray, pyritic, ostracods, pelecypods, carbonaceous plant fragments; interbedded coaly shale near base.

8109.5-13 Claystone, medium-dark-gray, carbonaceous plant fragments, root traces.

3921 Amerada Petroleum Corp. - State of North Dakota #1, NE SE Sec. 22, T. 139 N., R. 102 W., Billings County, North Dakota. KB 2395

7680-91 Mudstone, mottled grayish-red, greenish-gray, and dusky-yellow, calcareous, post-depositional features, slickensides, calcareous clasts at base; medium-gray ostracod wackestone bed from 7687.8-88.3, anhydritic.

7691-95.3 Claystone, mottled light-olive-gray, medium-dark-gray, and grayish-red, calcareous, mottle bioturbated.

7695.3-96.8	Shale, dark-gray to black, calcareous, pyritic, anhydrite clasts, ostracods.
7696.8-7700.5	Lime mudstone, medium-dark-gray to dark-gray, even-parallel laminated, argillaceous, anhydritic, desiccation features; interbedded with matrix supported "shell hash"; interbedded with dark-gray to black shale.
7700.5-02.5	Shale, dark-gray to black, calcareous, pyritic, ostracods, pelecypods, brachiopods; interbedded with dark-gray lime mudstone.
7702.5-05	Lime mudstone, medium-dark-gray to dark-gray, argillaceous, even-parallel laminated; interbedded with dark-gray to black shale, calcareous, pyritic.
7705-08.8	Shale, medium-gray to medium-dark-gray, calcareous, coaly, brachiopods, pelecypods, pyritic, pyritized fossils; interbedded with dark-gray lime mudstone.
7708.8-11.8	Lime mudstone, medium-dark-gray to dark-gray, even-parallel laminated, argillaceous, pyritic, conglomeratic limestone at top, desiccation features; interbedded with medium-dark-gray ostracod wackestone.
7711.8-13.8	Shale, dark-gray to black, calcareous, pyritic, ostracods; interbedded with medium-dark-gray lime mudstone.
7713.8-16	Lime mudstone, medium-dark-gray to dark-gray, wavy-nonparallel laminated, argillaceous, conglomeratic limestone at top; interbedded with dark-gray shale, pyritic, calcareous.
7716-25	Shale, dark-gray to black, even-parallel laminated, calcareous, pyritic, ostracods, pelecypods, brachiopods, pyritized fossils, slickensides.
7725-26.3	Lime mudstone, dark-gray, argillaceous, pyritic.
7726.3-30	Shale, dark-gray to black, even-parallel to wavy-nonparallel laminated, calcareous, pyritic, ostracods, pelecypods, brachiopods; interbedded with medium-dark-gray lime mudstone at base.
7730-66	Not cored.
7766-68.8	Shale, dark-gray to black, even-parallel laminated, calcareous, pyritic, anhydrite nodules at top, slickensides; interbedded with medium-dark-gray lime mudstone.

7768.8-80.5 Mudstone, mottled grayish-red, greenish-gray, and dusky-yellow, calcareous, pyritic, slickensides, post-depositional features, ostracods, olive-gray lime mudstone from 7771.7-7772 feet.

7780.5-93 Shale, dark-gray to black and grades upward into dark-greenish-gray, calcareous, pyritic, ostracods, pelecypods, brachiopods; interbedded with dark-gray lime mudstone.

3951 Amerada Petroleum Corp. - Anne Morton #1, SW SW Sec. 15, T. 139 N., R. 101 W., Billings County, North Dakota. KB 2530

7890-96.3 Lime mudstone, medium-dark-gray to dark-gray, even- to wavy-parallel and wavy-nonparallel laminated, argillaceous, pyritic, ostracods, white anhydrite; interbedded with dark-gray to black shale.

7896.3-7905.5 Sandstone, light-gray to brown, planar crossbedded, fine- to medium-grained, well-sorted, subrounded to rounded, calcareous, bioturbated, hydrocarbon stained; interbedded with dark-gray shale laminae.

Thin-section (7897) - Quartzarenite, very fine-to medium-grained, poorly to moderately sorted, subrounded to well-rounded, quartz and carbonate cement, detrital clay, good porosity.

Thin-section (7899) - Quartzarenite, fine- to medium-grained, poorly sorted, subangular to rounded, carbonate and quartz cement.

7905.5-08 Shale, dark-gray to black, pyritic; interbedded with very light-gray, fine-grained sandstone.

7908-09.5 Lime mudstone, medium-dark-gray to dark-gray, argillaceous, ostracods, pelecypods.

7909.5-12 Shale, medium-dark-gray to black, calcareous, pyritic, ostracods, carbonaceous plant fragments, slickensides.

7912-14 Claystone, medium-dark-gray, calcareous, calcareous nodules (<1.5 cm), pyritic, carbonaceous plant fragments, slickensides.

7914-23.8 Mudstone, mottled light-olive-gray, greenish-gray, grayish-red, and dusky-yellow, calcareous, light-colored calcareous nodules, pyritic, slickensides, post-depositional features.

7923.8-29 Sandstone, mottled grayish-red, greenish-gray, and dusky-yellow, very fine- to coarse-grained, poorly sorted, subrounded to well-rounded, argillaceous, calcareous; interbedded with grayish-red mudstone.

Thin-section (7927.2) - Quartzarenite, very fine- to coarse-grained, poorly sorted, subrounded to well-rounded, quartz, carbonate, sulfate, and hematite cement, detrital clay, authigenic chlorite.

7929-33.3 Mudstone, mottled grayish-red, greenish-gray, and dusky-yellow, calcareous, light-colored calcareous nodules, conglomerate composed of lime pebbles in mud matrix, slickensides, anhydritic.

7933.3-38 Sandstone, very light-gray to light-gray, planar crossbedded, fine- to medium-grained, moderately sorted, rounded, calcareous.

Thin-section (7935) - Quartzarenite, very fine- to coarse-grained, poorly sorted, subrounded to well-rounded, quartz cement, detrital clay.

Thin-section (7938) - Quartzarenite, very fine- to medium-grained, poorly sorted, subrounded to well-rounded, sulfate and quartz cement, detrital clay, authigenic kaolinite and chlorite.

7938-40 Siltstone, mottled grayish-red and greenish-gray.

7940-43 Mudstone, dark-greenish-gray to medium-dark-gray, calcareous, ostracods, pelecypods.

4009 Amerada Petroleum Corp. - U. S. A. Loomis #1, NE NE Sec. 20, T. 139 N., R. 101 W., Billings County, North Dakota. KB 2539

7871-72 Claystone, dark-greenish-gray to pale-olive, calcareous, carbonaceous plant fragments.

7872-73.5 Algal grainstone/boundstone, medium-gray, even-parallel laminated, anhydritic.

7873.5-79 Shale, dark-gray to black, even- to wavy-parallel laminated, calcareous, pyritic, ostracods, pelecypods.

7879-87 Lime mudstone, medium-dark-gray to dark-gray, even-parallel to wavy-nonparallel laminated, argillaceous, pyritic, quartz sand wackestone at base; interbedded with dark-gray ostracod-pelecypod wackestone/packstone; interbedded with dark-gray

shale, dark-gray lime mudstone clasts, ostracods, pelecypods.

7887-7900 Sandstone, very light-gray to light-gray, planar crossbedded to massively bedded, fine- to medium-grained, well-sorted, subrounded to rounded, bioturbated, hydrocarbon stained; interbedded with dark-gray shale laminae.

Thin-section (7890) - Quartzarenite, very fine- to coarse-grained, poorly sorted, subrounded to well-rounded, quartz and carbonate cement, detrital clay, authigenic kaolinite, fair porosity.

Thin-section (7891) - Quartzarenite, very fine- to medium-grained, poorly to moderately sorted, subrounded to well-rounded, quartz cement, detrital clay, authigenic kaolinite.

4025 Amerada Petroleum Corp. - U. S. A. Fuchs-luchsinger Unit #1, SE NW Sec. 10, T. 139 N., R. 102 W., Billings County, North Dakota. KB 2296

7604-11.5 Shale, dark-gray to black, even-parallel laminated, calcareous, pyritic, dark-gray lime mudstone clasts, anhydritic, ostracods, pelecypods, brachiopods.

7611.5-15.2 Lime mudstone, medium-dark-gray to dark-gray, even-parallel to wavy-nonparallel laminated, argillaceous, ostracods; interbedded with dark-gray shale, dark-gray lime mudstone clasts, calcareous, ostracods.

7615.2-18.8 Shale, dark-gray to black, even-parallel laminated, calcareous, pyritic, ostracods, pelecypods, brachiopods; interbedded with dark-gray micritic limestone, argillaceous, ostracods.

7618.8-22 Sandstone, very light-gray to light-gray, fine-grained, well-sorted, bioturbated in shaly base; interbedded with dark-gray shale laminae, pyritic.

Thin-section (7619) - Quartzarenite, very fine- to medium-grained, poorly sorted, subangular to rounded, quartz, carbonate, and pyrite cement.

7622-25 Shale, dark-gray to black, even-parallel to wavy-nonparallel laminated, calcareous, pyritic, ostracods, pelecypods, brachiopods.

7625-26.4 Skeletal-intraclastic wackestone, dark-gray, argillaceous, even-parallel laminated.

7626.4-27 Shale, medium-gray to dark-gray, calcareous, pyritic, ostracods, pelecypods, carbonaceous plant fragments.

7627-28.3 Shale, medium-gray to medium-dark-gray, silty, pyritic, slickensides, carbonaceous plant fragments.

7628.3-28.8 Shale, medium-gray to dark-gray, carbonaceous, interlaminated with bituminous coal laminae.

7628.8-32.5 Claystone, medium-light-gray to medium-dark-gray, calcareous, pyritic, calcareous nodules (<1.5 cm) scattered throughout top, carbonaceous plant fragments, slickensides.

7632.5-35 Mudstone, mottled grayish-red, medium-dark-gray, and dusky-yellow, calcareous, light-colored calcareous nodules, post-depositional features, slickensides.

7635-36 Mudstone, medium-dark-gray to dark-gray, calcareous, slickensides; interbedded with dark-gray lime mudstone.

7636-40.3 Mudstone, mottled grayish-red and medium-dark-gray, sandy, calcareous, light colored calcareous nodules, slickensides.

7640.3-41 Sandstone, mottled grayish-red and greenish-gray, medium-grained, well-sorted, rounded to well-rounded, calcareous, argillaceous.

Thin-section (7641) - Quartzarenite, very fine- to coarse-grained, poorly sorted, rounded to well-rounded, carbonate, sulfate, and hematite cement, authigenic chlorite.

4150 Signal Drilling Co., Inc. - Zahradnik #1, SE SE Sec. 34, T. 140 N., R. 97 W., Stark County, North Dakota. KB 2475

7860-65.7 Amsden Formation - Nodular lime mudstone, mottled light-gray, medium-gray, and grayish-red purple, argillaceous; interbedded with medium-gray shale.

7865.7-70 Mudstone, mottled olive-gray, dusky-yellow, and blackish-red, calcareous.

7870-71.3 Mudstone, mottled yellowish-brown and light-olive-gray, slightly calcareous to dolomitic, anhydrite nodules, anhydritic.

7871.3-73 Mudstone, mottled dark-reddish-brown, dusky-yellow, and greenish-gray, slightly calcareous to dolomitic,

post-depositional features, anhydrite nodules, anhydritic.

7873-82 Mudstone, mottled dark-reddish-brown and greenish-gray, slightly calcareous to dolomitic, post-depositional features, ostracods; interbedded with contorted dark-reddish-brown siltstone, bioturbated, compaction features.

7882-84 Not cored.

7884-85.9 Mudstone, mottled dark-reddish-brown, dusky-yellow, and light-olive-gray, calcareous, ostracods.

7885.9-91.6 Shale, dark-gray to black grades upward into medium-gray, calcareous, pyritic, ostracods, pelecypods, pyritized fossils.

7891.6-94.2 Pelecypod wackestone, medium-dark-gray to dark-gray, even-parallel laminated, argillaceous, pyritic; interbedded with dark-gray shale and dark-gray lime mudstone.

7894.2-96 Shale, dark-gray to black, calcareous, ostracods, pelecypods, brachiopods, pyritized fossils.

7896-7902 Lime mudstone, medium-dark-gray to dark-gray, even-parallel to wavy-nonparallel laminated, argillaceous, pyritic, desiccation features, matrix-supported "shell hash"; interbedded with dark-gray ostracod wackestone; interbedded with dark-gray shale, ostracods, brachiopods.

7902-04.4 Shale, dark-gray to black, even- to wavy-parallel laminated, calcareous, pyritic, ostracods, pelecypods, carbonaceous plant fragments.

7904.4-07.3 Lime mudstone, medium-dark-gray to dark-gray, even- to wavy-parallel laminated, argillaceous, pyritic, anhydritic; interbedded with dark-gray, ostracod-pelecypod wackestone; interbedded with dark-gray shale, dark-gray lime mudstone clasts, anhydritic.

7907.3-20.5 Core missing.

7920.5-21.3 Mudstone, dark-greenish-gray, sandy, calcareous, pyritic, calcareous nodules.

7921.3-22.3 Lime mudstone, medium-light-gray to medium-dark-gray, argillaceous, sandy, pyritic, root traces.

7922.3-53.8 Sandstone, light-gray to medium-gray and dark-yellowish-brown to dusky-yellowish-brown, massively bedded, fine- to medium-grained, well-sorted, subrounded to rounded, calcareous, brecciated at base, hydrocarbon stained; interbedded with medium-light-gray, nodular, quartz sand wackestone; interbedded with dark-gray shale laminae. Not cored from 7937-7946.

Thin-section (7949) - Quartzarenite, fine- to coarse-grained, moderately sorted, subrounded to rounded, quartz and carbonate cement, authigenic kaolinite, poor porosity.

Thin-section (7950.3) - Quartzarenite, very fine- to medium-grained, poorly to moderately sorted, subangular to subrounded, quartz and carbonate cement, detrital clay, authigenic kaolinite.

7953.8-59.5 Shale, mottled medium-dark-gray, moderate-brown and very dark-red, silty, carbonaceous plant fragments; interbedded with very light-gray, fine-grained sandstone.

7959.5-67.6 Shale, banded medium-dark-gray, dark-gray, moderate-brown, and dark-reddish-brown, even-parallel laminated, calcareous, pyritic, carbonaceous plant fragments, slickensides.

7967.6-68.4 Mudstone, mottled greenish-gray and dusky-red, silty, calcareous, pyritic, mud pebbles, brecciated.

7968.4-76.5 Sandstone, mottled very light-gray, yellowish-gray, and dark-reddish-brown, planar crossbedded, very fine- to medium-grained, moderately to well-sorted, subrounded to well-rounded, calcareous, pyritic; interbedded with greenish-gray shale laminae.

Thin-section (7969) - Quartzarenite, very fine- to medium-grained, poorly sorted, subangular to rounded, quartz and carbonate cement, detrital clay.

7976.5-78 Mudstone, mottled medium-dark-gray, dark-gray, and very dusky-red-purple, slightly calcareous, slickensides, ostracods, carbonaceous plant fragments.

7978-81 Siltstone, mottled dusky-yellow, very dusky-red-purple, dusky-red, and medium-dark-gray, slightly calcareous, pyritic, ostracods, root traces.

7981-85 Shale, medium-gray to black, calcareous, pyritic, ostracods, pelecypods, brachiopods.

4228 Shell Oil Co. - C. J. Steffan #22-2-2, SE NW Sec. 2, T. 139 N., R. 97 W., Stark County, North Dakota. KB 2464

7890-93.3 Sandstone, very light-gray, planar crossbedded, fine-grained, well-sorted, subrounded, bituminous coal pebbles; interbedded with dark-gray shale laminae.

Thin-section (7893) - Quartzarenite, very fine- to fine-grained, moderately to well-sorted, subrounded to well-rounded, quartz cement, authigenic clay.

7893.3-7903 Shale, medium-dark-gray to black, pyritic, carbonaceous plant fragments; interbedded with bituminous coal laminae.

7903-06 Otter Formation - Mudstone, greenish-gray, calcareous, calcareous nodules; interbedded with greenish-gray, nodular lime mudstone.

4229 Tenneco Oil Co. - P. Duletski #1, SE NE Sec. 12, T. 139 N., R. 100 W., Billings County, North Dakota. KB 2678

8184-89 Tyler Formation - Mudstone, medium-dark-gray to dark-gray, calcareous, pyritic, ostracods, root traces, post-depositional features. Overlying the Tyler Formation is the Amsden Formation consisting of medium-dark-gray, argillaceous, lime mudstone.

8189-95 Mudstone, mottled light-olive-gray, greenish-gray, grayish-red, moderate-yellowish-brown, and moderate-olive-brown, calcareous, bioturbated, slickensides.

8195-8202.5 Mudstone, mottled light-olive-gray and dark-gray, calcareous, pyritic, ostracods, bioturbated.

8202.5-05.3 Shale, dark-gray to black, calcareous, ostracods, pelecypods, brachiopods.

8205.3-07 Lime mudstone to skeletal wackestone, medium- dark-gray to dark-gray, argillaceous.

8207-8212 Shale, dark-gray to black, calcareous, pyritic, ostracods; interbedded with medium-dark-gray, lime mudstone.

8212-15.5 Lime mudstone, medium-dark-gray to dark-gray, argillaceous, root traces, desiccation features, conglomeratic limestone at top.

8215.5-16.8 Algal grainstone/boundstone, medium-gray to olive-gray, hydrocarbon stained.

8216.8-21 Shale, dark-gray to black, calcareous, ostracods; interbedded with medium-dark-gray lime mudstone.

8221-22.3 Ostracod wackestone/packstone, medium-dark-gray to dark-gray, argillaceous.

8222.3-23.5 Shale, dark-gray to black, calcareous, ostracods, dark-gray lime mudstone clasts, anhydritic.

8223.5-26 Lime mudstone, medium-dark-gray to dark-gray, argillaceous, pyritic, brecciated.

4446 Union Oil Co. of California - R. P. Pflepsen #1, NW NW Sec. 11, T. 139 N., R. 93 W., Stark County, North Dakota. KB 2456

7240-40.7 Shale, olive-gray to medium-dark gray, slightly calcareous, pyritic.

7240.7-44 Shale, dark-gray to black, silty, calcareous, pyritic.

7244-46.3 Sandstone, pale-olive to greenish-gray, ripple-cross laminated, very fine- to fine-grained, moderately to well-sorted, subangular to subrounded, argillaceous; interbedded with greenish-gray shale laminae.

7246.3-72.8 Sandstone, pale-yellowish-brown and light-olive-gray to yellowish-gray, planar crossbedded, very fine- to medium-grained, moderately to poorly sorted, subangular to subrounded, fining upward sequences, calcareous, argillaceous, pyritic, mud pebbles; interbedded with greenish-gray shale laminae.

Thin-section (7256) - Quartzarenite, fine-grained, moderately to well-sorted, subrounded to rounded, opal cement, good porosity.

Thin-section (7268) - Quartzarenite, fine-grained, well-sorted, subrounded to rounded, calcite and opal cement, fair porosity.

7272.8-74 Conglomerate, mudstone, limestone, and bituminous coal pebbles, quartz sand matrix, fining upwards; rests unconformably on the Otter Formation composed of pale-olive, greenish-gray, and light-olive-gray to olive-gray, calcareous, silty mudstone and shale.

4524 Cardinal Petroleum Co. et al - Northern Pacific R. R. #16-5, SE SE Sec. 5, T. 139 N., R. 98 W., Stark County, North Dakota. KB 2524

8013-26.2 Lime mudstone to ostracod-pelecypod wackestone, medium-dark-gray to dark-gray, even- to wavy-parallel laminated, argillaceous, pyritic, anhydritic; interbedded with dark-gray to black shale, calcareous, dark-gray lime mudstone clasts, anhydritic, ostracods, pelecypods.

8026.2-27 Shale, dark-gray to black, sandy, calcareous, pyritic.

8027-37.6 Sandstone, dark-yellowish-brown to very light-gray, planar crossbedded, fine-grained, well-sorted, subrounded to rounded, calcareous, pyritic, root traces, hydrocarbon stained; interbedded with dark-gray shale laminae.

Thin-section (8029.3) - Quartzarenite, very fine- to medium-grained, moderately to poorly sorted, subangular to subrounded, quartz and carbonate cement, detrital clay, authigenic kaolinite.

Thin-section (8031.7) - Quartzarenite, fine-grained, well-sorted, subrounded to rounded, quartz cement, detrital clay, authigenic kaolinite, good porosity.

Thin-section (8037.1) - Quartzarenite, fine-grained, well-sorted, subrounded to well-rounded, quartz cement, detrital clay.

8037.6-39.7 Nodular lime mudstone, very light-gray to light-gray, argillaceous, pyritic, ostracods, pelecypods; interlaminated with olive-gray shale.

8039.7-42.8 Shale, greenish-gray to dark-greenish-gray, pyritic, pelecypods, brachiopods; interbedded with grayish-red, fine-grained sandstone, calcareous, ostracods.

8042.8-45 Mudstone, light-olive-gray, sandy, carbonaceous plant fragments.

8045-48.4 Mudstone, mottled grayish-red and greenish-gray, calcareous, light-colored calcareous nodules.

8048.4-49 Sandstone, grayish-red, laminated, fine- to medium-grained, argillaceous.

8049-50.3 Mudstone, mottled grayish-red and greenish-gray,

calcareous, light-colored calcareous nodules, post-depositional features.

8050.3-56 Mudstone, mottled grayish-red, dusky-yellow, and greenish-gray, silty, calcareous, slickensides, post-depositional features.

8056-64 Sandstone, mottled grayish-red and greenish-gray, laminated to planar crossbedded, very fine- to coarse-grained, moderately to poorly sorted, subrounded to well-rounded, calcareous, argillaceous; interbedded with grayish-red to greenish-gray shale, light-colored calcareous nodules.

Thin-section (8058) - Quartzarenite, fine- to medium-grained, moderately sorted, subrounded to well-rounded, quartz, carbonate, and hematite cement.

Thin-section (8062) - Quartzarenite, fine- to coarse-grained, poorly sorted, subrounded to well-rounded, quartz and hematite cement, authigenic chlorite.

Thin-section (8063.3) - Quartzarenite, very fine- to coarse-grained, poorly sorted, subrounded to well-rounded, quartz, carbonate, and hematite cement, poor porosity.

4741 Mule Creek Oil Co., Inc. - Shell State #1, SE SE Sec. 16, T. 140 N., R. 103 W., Golden Valley County, North Dakota. KB 2618

7871-82 Shale, dark-gray to black, even- to wavy-parallel and wavy-nonparallel laminated, calcareous, pyritic, ostracods, pelecypods; interbedded with dark-gray, lime mudstone, argillaceous.

7882-7884 Lime mudstone, medium-dark-gray to dark-gray, even- to wavy-parallel and wavy-nonparallel laminated, argillaceous, pelecypods.

7884-88 Core missing.

7888-89 Ostracod packstone, medium-dark-gray, argillaceous, pyritic.

7889-95.5 Shale, dark-gray to black, calcareous, pyritic, ostracods, pelecypods.

7895.5-97 Skeletal wackestone, medium-dark-gray to dark-gray, argillaceous, pyritic.

7897-98 Shale, dark-gray, pyritic, carbonaceous plant fragments, pelecypods, ostracods.

7898-7900 Claystone, medium-gray to medium-dark-gray, calcareous, calcareous nodules (<1.5 cm), pyritic, carbonaceous plant fragments, slickensides, friable

7900-03 Mudstone, mottled olive-gray and medium-gray, calcareous, pyritic, post-depositional features.

7903-05 Mudstone, mottled grayish-red, greenish-gray, and dusky-yellow, friable, slickensides.

7905-06 Sandstone, grayish-red to very dark-red, very fine- to medium-grained, poorly sorted, subrounded to rounded, calcareous, ostracods.

7906-07 Mudstone, mottled grayish-red, greenish-gray, and dusky-yellow, friable, slickensides.

7907-11 Sandstone, grayish-red, mottled to massively bedded, very fine- to fine-grained, poorly sorted, subangular to well-rounded, calcareous, bioturbated; interbedded with grayish-red shale laminae.

Thin-section (7908) - Quartzarenite, very fine- to fine-grained, moderately sorted, subangular to subrounded, carbonate, hematite, and quartz cement.

Thin-section (7911) - Quartzarenite, very fine- to fine-grained, moderately sorted, subangular to subrounded, carbonate and hematite cement.

4802 Shell Oil Co. - Gust Wog #34-25, SW SE Sec. 25, T. 137 N., R. 100 W., Billings County, North Dakota. KB 2835

8035-52 Claystone, mottled light-gray, dark-gray, and grayish-red, even- to wavy-parallel laminated, brecciated, silty, pyritic, coaly, carbonaceous plant fragments; interbedded with nodular limestone from 8041.5-42.8; interbedded with planar crossbedded sandstone from 8042.8-43.

8052-61.5 Sandstone, mottled very light-gray, light-gray, and pale-red, planar crossbedded, fine- to coarse-grained, poorly sorted, subangular to subrounded, fining-upward sequences, hydrocarbon stained; interbedded with medium-gray shale, calcareous, pyritic, carbonaceous plant fragments.

Thin-section (8052.2) - Quartzarenite, fine- to coarse-grained, poorly sorted, subangular to rounded,

quartz, carbonate, and siderite cement, detrital clay, authigenic kaolinite.

Thin-section (8053.8) - Quartzarenite, fine- to medium-grained, moderately sorted, subrounded to rounded, quartz and carbonate cement, detrital clay, authigenic kaolinite, good porosity.

Thin-section (8060) - Quartzarenite, very fine- to medium-grained, poorly sorted, subangular to subrounded, carbonate, ankerite, siderite, and hematite cement, authigenic chlorite.

8061.5-90 Shale, medium-dark-gray to black, calcareous, pyritic, ostracods, pelecypods, brachiopods, pyritized fossils, carbonaceous plant fragments, slickensides, root traces; interbedded with lime mudstone, even- to wavy-parallel laminated; 5 cm thick bituminous coal bed at 8085.

4906 Cardinal Petroleum Co. - Schank et al #5-14, SW NW Sec. 14, T. 140 N., R. 96 W., Stark County, North Dakota. KB 2502

7882-84.3 Ostracod-pelecypod-oncolite wackestone/packstone, banded medium-dark-gray, dark-yellowish-brown, and dusky-yellowish-brown, argillaceous, sandy, anhydritic, hydrocarbon stained.

7884.3-86.5 Shale, banded dark-gray, grayish-red, and greenish-gray, silty, calcareous, ostracods.

7886.5-87.3 Sandstone, light-brownish-gray to grayish-red-purple, fine-grained, well-sorted, subangular to subrounded, calcareous.

7887.3-87.8 Mudstone, olive-gray, calcareous, sandy.

7887.7-89.5 Intraclastic wackestone, mottled olive-gray, medium-dark-gray, and grayish-red, argillaceous, sandy.

7889.5-7902.7 Mudstone, mottled pale-red-purple to very dusky-red-purple, greenish-gray, yellowish-gray, pale-greenish-yellow, grayish-red, dark-reddish-brown, and dusky-yellow, silty, sandy, calcareous, dolomitic, anhydritic, light-colored calcareous to dolomitic nodules, post-depositional features, root traces, ostracods, iron oxide concretions.

7902.7-05 Sandstone, dark-yellowish-brown to dusky-yellowish-brown, very fine- to fine-grained, well-sorted, subrounded to rounded, calcareous, hydrocarbon stained.

pelecypods, carbonaceous plant fragments, pyritized fossils, coaly.

8004-06.5 Claystone, medium-gray, calcareous, calcareous nodules (<1.5 cm), pyritic, carbonaceous plant fragments, slickensides.

8006.5-17 Shale, dark-gray, calcareous, pyritic, carbonaceous plant fragments, slickensides.

5138 Continental Oil Co. - Jearmchuck-BND #1, NE SE Sec. 25, T. 140 N., R. 98 W., Stark County, North Dakota. KB 2623

8120-59 Shale, medium-gray to dark-gray, silty, pyritic, carbonaceous plant fragments; interbedded with light-gray, fine-grained sandstone.

8159-79 Sandstone, light-gray to light-olive-gray, planar crossbedded, medium- to coarse-grained, moderately to well-sorted, subrounded to rounded, fining upward sequences, argillaceous, calcareous, mud pebbles; interbedded with dark-gray shale.

Thin-section (8162) - Quartzarenite, fine- to medium-grained, well-sorted, subrounded to well-rounded, quartz, carbonate, and sulfate cement, poor porosity.

Thin-section (8171.3) - Quartzarenite, fine- to medium-grained, well-sorted, rounded to well-rounded, quartz and sulfate cement, good porosity.

Thin-section (8177) - Quartzarenite, fine- to coarse-grained, poorly sorted, subrounded to well-rounded, quartz, sulfate, and carbonate cement, detrital clay, poor porosity.

5371 Continental Oil Co. - Dickinson Heath Sand Unit #46, NE SW Sec. 25, T, 140 N., R. 97 W., Stark County, North Dakota. KB 2574

7920-23.5 Claystone, mottled dusky-yellow and greenish-gray, pyritic, slickensides.

7923.5-33.8 Mudstone, dark-reddish-brown, slightly calcareous to dolomitic, anhydritic, post-depositional features, bioturbated, black shale at base; interbedded with grayish-red siltstone and fine-grained sandstone, contorted bedding.

7933.8-36 Conglomerate, lime pebbles in mud matrix, mottled grayish-orange to dark-yellowish-orange and grayish-red, ostracods.

7936-37.4 Ostracod wackestone, mottled dark-reddish-brown, medium-gray, and dusky-yellow, argillaceous.

7937.4-39.6 Shale, grades upward from mottled medium-gray and dark-gray to dark-reddish-brown, calcareous, post-depositional features, ostracods, bioturbated.

7939.6-43.7 Shale, dark-gray to black, calcareous, pyritic, ostracods, pelecypods; interbedded with greenish-gray siltstone.

7943.7-46 Lime mudstone, medium-dark-gray to dark-gray, even-parallel laminated, argillaceous, pyritic, matrix supported "shell hash"; interbedded with dark-gray shale.

7946-46.8 Shale, dark-gray to black, calcareous, ostracods, pelecypods.

7946.8-49.8 Not cored.

7949.8-60 Lime mudstone, medium-gray to dark-gray, even- to wavy-parallel laminated, argillaceous, pyritic, anhydritic; interbedded with ostracod wackestone, ostracod-pelecypod-brachiopod wackestone/packstone, and algal grainstone/boundstone; interbedded with calcareous, dark-gray shale, dark-gray lime mudstone clasts, anhydritic.

7960-67.3 Sandstone, very light-gray to light-gray, massive, very fine- to medium-grained, well-sorted, subrounded to rounded, calcareous, argillaceous, hydrocarbon stained; quartz sand wackestone at top.

Thin-section (7961) - Quartzarenite, very fine- to medium-grained, poorly sorted, angular to rounded, quartz and carbonate cement.

Thin-section (7962.3) - Quartzarenite, very fine- to medium-grained, poorly sorted, angular to rounded, carbonate and pyrite cement.

Thin-section (7966.8) - Quartzarenite, very fine- to fine-grained, well-sorted, subrounded to rounded, quartz and pyrite cement, detrital clay, fair porosity.

7967.3-70.5 Shale, dark-gray to black, calcareous, pyritic, ostracods, pelecypods.

7970.5-71.5 Intraclastic-skeletal wackestone/packstone, medium-

dark-gray to dark-gray, argillaceous, pyritic; interbedded with calcareous, dark-gray shale.

7971.5-78.2 Quartz sand wackestone, mottled light-gray, medium-gray, dark-gray, and greenish-gray, nodular, brecciated, argillaceous, pyritic, root traces.

7978.2-84.8 Sandstone, moderate-yellowish-brown to dusky-yellowish-brown, massive, medium-grained, well-sorted, subrounded to well-rounded, calcareous, hydrocarbon stained.

Thin-section (7980) - Quartzarenite, fine- to medium-grained, well-sorted, subrounded to well-rounded, quartz cement, detrital clay, good porosity.

Thin-section (7984) - Quartzarenite, fine- to medium-grained, well-sorted, rounded to well-rounded, carbonate and quartz cement, detrital clay, good porosity.

7984.8-88 Shale, dark-gray to black, even- to wavy-parallel laminated, calcareous, pyritic, ostracods, pelecypods, brachiopods; interbedded with dark-gray lime mudstone.

7988-91 Not cored.

7991-96 Siltstone, grayish-red to dark-reddish-brown, calcareous; interbedded with grayish-red, fine-grained sandstone, argillaceous.

5372 Continental Oil Co. - Wagner-Pavel #1, SE NW Sec. 10, T. 139 N., R. 98 W., Stark County, North Dakota. KB 2495

7939-39.6 Shale, dark-gray to black, calcareous, very light-gray, calcareous pebbles at base.

7939.6-43 Skeletal-intraclastic lime mudstone, mottled dusky-yellow and yellowish-gray, argillaceous, root traces, brecciated at top, ostracods, matrix-supported "shell hash".

7943-46 Mudstone, mottled grayish-red, dusky-yellow, and olive-gray, calcareous, pyritic, ostracods.

7946-50.5 Mudstone, mottled dark-reddish-brown, light-olive-gray, and dusky-yellow, calcareous, bioturbated, slickensides, root traces.

7950.5-51 Mudstone, grayish-red, calcareous, light-olive-gray calcareous pebbles, brecciated, desiccation features.

7951-52.3	Nodular lime mudstone, mottled light-gray, medium-gray, and grayish-red, argillaceous, brecciated, desiccation features.
7952.3-56	Claystone, mottled light-olive-gray, medium-gray, and dark-gray, calcareous, bioturbated.
7956-59.7	Shale, dark-gray to black, calcareous, pyritic, ostracods; interbedded with dark-gray lime mudstone at base.
7959.7-61.3	Skeletal-intraclastic packstone, medium-dark-gray to dark-gray, argillaceous, oncolites, matrix-supported "shell hash".
7961.3-66.3	Shale, dark-gray to black, calcareous, ostracods, pelecypods, brachiopods; interbedded with medium-dark-gray lime mudstone.
7966.3-70	Lime mudstone, medium-dark-gray to dark-gray, argillaceous, pyritic, conglomeratic limestone at top, brecciated, bioturbated, root traces, desiccation features; interbedded with calcareous, dark-gray shale, ostracods.
7970-71.5	Algal grainstone/boundstone, medium-gray to medium-dark-gray, even-parallel laminated, brachiopods, hydrocarbon stained.
7971.5-91.3	Shale, dark-gray to black, even-parallel to wavy-nonparallel laminated, calcareous, pyritic, dark-gray lime mudstone clasts, anhydritic, thin bituminous coal bed at base, ostracods, pelecypods, brachiopods; interbedded with medium-dark-gray lime mudstone, ostracod wackestone/packstone, and pelecypod-ostracod-brachiopod wackestone/packstone.
7991.3-94	Sandstone, light-gray to light-olive-gray, fine-grained, well-sorted, calcareous, root traces.
7994-96.3	Claystone, greenish-gray to olive-gray, calcareous, pyritic, light-colored calcareous nodules.
7996.3-8001	Shale, greenish-gray, calcareous, pyritic, light-colored calcareous nodules near the top; interbedded with fine-grained sandstone.
8001-10	Mudstone, mottled grayish-red, greenish-gray, and dusky-yellow, sandy, slightly calcareous to dolomitic, post-depositional features, root traces, calcareous clasts (<3 mm), ostracods.

8010-18 Mudstone, mottled grayish-red, greenish-gray, and dusky-yellow, calcareous to dolomitic, light-colored calcareous to dolomitic nodules, post-depositional features, slickensides, root traces.

8018-22 Mudstone, mottled greenish-gray and dark-reddish-brown, slightly calcareous, light-colored calcareous nodules, post-depositional features, root traces; interbedded with medium- to coarse-grained, planar crossbedded sandstone.

5434 Continental Oil Co. - Dickinson Heath Sand Unit #48, SW NE Sec. 33, T. 140 N., R. 97 W., Stark County, North Dakota. KB 2561

7908-20.5 Lime mudstone, medium-dark-gray to dark-gray, even- to wavy-parallel and wavy-nonparallel laminated, argillaceous, pyritic, root traces, desiccation features; interbedded with ostracod wackestone/packstone and ostracod-pelecypod-brachiopod packstone; interbedded with dark-gray to black, shale, calcareous, pyritic, ostracods, pelecypods, brachiopods, dark-gray lime mudstone clasts, anhydritic.

7920.5-23 Shale, dark-gray to black, calcareous, pyritic, ostracods; interbedded with medium-dark-gray lime mudstone.

7923-26.3 Sandstone, very light-gray to brown, very fine-to fine-grained, well-sorted, subrounded to rounded, calcareous, pyritic, hydrocarbon stained; interbedded with dark-gray shale laminae.

Thin-section (7924) - Quartzarenite, fine-grained, well-sorted, subrounded to rounded, carbonate, quartz, and pyrite cement, poor porosity.

Thin-section (7924.5) - Quartzarenite, very fine-to fine-grained, well-sorted, subrounded to well-rounded, quartz, carbonate, and pyrite cement.

7926.3-30.8 Shale, medium-dark-gray to black, silty, calcareous pyritic, ostracods, carbonaceous plant fragments; interbedded with medium-gray, fine-grained sandstone.

7930.8-32.1 Skeletal-intraclastic wackestone, medium-dark-gray to dark-gray, argillaceous, pyritic; dark-gray shale at base.

7932.1-33.5 Sandstone, grayish-olive to olive-gray, fine- to

medium-grained, argillaceous, calcareous, root traces.

7933.5-35.2 Sandstone, brown, massive, very fine- to medium-grained, well-sorted, subrounded to rounded, root traces, hydrocarbon stained.

Thin-section (7933.7) - Quartzarenite, very fine- to medium-grained, poorly sorted, subrounded to rounded, carbonate, quartz, and pyrite cement, authigenic kaolinite.

Thin-section (7935) - Quartzarenite, very fine- to medium-grained, poorly sorted, subangular to rounded, carbonate and quartz cement, poor porosity,

7935.2-36.1 Sandstone, greenish-gray to medium-gray, fine-to medium-grained, moderately sorted, subrounded to rounded, argillaceous, calcareous, calcareous nodules (8-10 cm).

7936.1-40 Sandstone, brown, massive, very fine- to medium-grained, moderately to well-sorted, subrounded to rounded, calcareous, hydrocarbon stained.

7940-43.4 Nodular quartz sand packstone, very light-gray to light-olive-gray, argillaceous, ostracods, pyritic.

7943.4-46 Mudstone, olive-gray to greenish-gray, silty, calcareous, calcareous nodules (<3 cm), ostracods, pyritic.

7946-47.5 Mudstone, olive-gray, silty, noncalcareous,

7947.5-49.9 Sandstone, mottled grayish-red, greenish-gray, and yellowish-gray, fine- to medium-grained, moderately sorted, subrounded to well-rounded, calcareous, calcareous nodules, ostracods, grades upward into siltstone.

7949.9-50.6 Mudstone, mottled greenish-gray to grayish-red, sandy, calcareous, calcareous nodules.

5442 Farmers Union Central Exchange - Krushensky #16-34, SE SE Sec. 34, T. 140 N., R. 99 W., Stark County, North Dakota. KB 2578

8110-13 Shale, dark-gray to black, even-parallel laminated, calcareous, pyritic, ostracods; interbedded with dark-gray lime mudstone.

8113-14.6 Pelecypod-brachiopod wackestone, medium-dark-gray to dark-gray, even-parallel laminated, matrix-supported "shell hash", argillaceous, pyritic, anhydritic.

8114.6-20 Shale, dark-gray to black, even-parallel laminated, calcareous, pyritic, ostracods, pelecypods, brachiopods, carbonaceous plant fragments; interbedded with dark-gray lime mudstone.

8120-33 Lime mudstone, medium-dark-gray to dark-gray, even- to wavy-parallel and wavy-nonparallel laminated, argillaceous, pyritic, matrix-supported "shell hash"; interbedded with ostracod-pelecypod-brachiopod wackestone/packstone and algal grainstone/boundstone, hydrocarbon stained; interbedded with calcareous, dark-gray shale.

8133-43 Sandstone, light-gray to brown, massive, very fine- to fine-grained, well-sorted, subrounded to rounded, calcareous, bioturbated, hydrocarbon stained; interbedded with dark-gray shale laminae.

Thin-section (8134) - Quartzarenite, fine-grained, well-sorted, subrounded to rounded, quartz cement, authigenic clay, fair porosity.

Thin-section (8142) - Quartzarenite, very fine-grained, well-sorted, subrounded, carbonate and quartz cement, authigenic clay.

8143-44 Lime mudstone, medium-dark-gray to dark-gray, argillaceous, pyritic.

8144-46 Shale, dark-gray to black, calcareous, pyritic, carbonaceous plant fragments, ostracods.

8146-46.8 Conglomeratic limestone, medium-dark-gray, argillaceous, pyritic, ostracods.

8146.8-50 Sandstone, light-gray, massive, fine- to medium-grained, well-sorted, subrounded to rounded, calcareous.

Thin-section (8148) - Quartzarenite, fine- to medium-grained, moderately to well-sorted, subrounded to well-rounded, quartz, carbonate, and sulfate cement, authigenic kaolinite, poor porosity.

8150-52 Ostracod wackestone, light-gray, argillaceous, pyritic, grades upward into medium-dark-gray, nodular lime mudstone.

8152-53.5 Shale, mottled dark-gray and greenish-gray, silty, brachiopods, bioturbated.

5443 Farmers Union Central Exchange - Obach #8-30, SE NE Sec., 30, T. 140 N., R. 98 W., Stark County, North Dakota. KB 2549

8088-91.5 Shale, dark-gray to black, calcareous, pyritic, ostracods, pelecypods; medium-dark-gray lime mudstone at base.

8091.5-93 Lime mudstone, medium-dark-gray to dark-gray, even-parallel laminated, argillaceous, matrix-supported "shell hash"; interbedded with medium-dark-gray intraclastic wackestone.

8093-97.8 Shale, dark-gray to black, even-parallel laminated, calcareous, pyritic, ostracods, pelecypods, brachiopods; interbedded with medium-dark-gray lime mudstone.

8097.8-99.8 Algal grainstone/boundstone, medium-gray to light-olive-gray, pyritic, anhydritic; interbedded with medium-gray shale.

8099.8-8101.8 Shale, dark-gray, calcareous, pyritic, ostracods, pelecypods, brachiopods; interbedded with dark-gray ostracod-pelecypod wackestone.

8101.8-04 Ostracod-pelecypod wackestone/packstone, medium-dark-gray, argillaceous, pyritic, anhydritic.

8104-04.8 Shale, dark-gray to black, calcareous, pyritic, dark-gray lime mudstone clasts.

8104.8-08.3 Lime mudstone, medium-dark-gray to dark-gray, even-parallel laminated, argillaceous, pyritic; interbedded with ostracod-pelecypod wackestone/packstone; interbedded with calcareous, dark-gray shale.

8108.3-09.8 Shale, dark-gray, calcareous.

8109.8-18.5 Sandstone, light-gray, planar crossbedded, very fine- to fine-grained, well-sorted, subrounded to rounded, calcareous, bioturbated, hydrocarbon stained.

Thin-section (8110) - Quartzarenite, fine-grained, well-sorted, subrounded to well-rounded, quartz and pyrite cement, authigenic clay, fair porosity.

Thin-section (8114) - Quartzarenite, very fine- to medium-grained, poorly sorted, subangular to rounded, quartz and sulfate cement, detrital clay, authigenic kaolinite, poor porosity.

Thin-section (8118) - Quartzarenite, fine-grained, well-sorted, subrounded to rounded, quartz, carbonate, and pyrite cement.

8118.5-22 Shale, dark-gray to black, silty, calcareous, pyritic, ostracods, carbonaceous plant fragments; interbedded with dark-gray lime mudstone and skeletal packstone near the base, even-parallel laminated; bituminous coal at the base.

8122-29 Sandstone, mottled very light-gray and medium-dark-gray, very fine- to fine-grained, well-sorted, subrounded to rounded, argillaceous, calcareous, pyritic, root traces at top.

Thin-section (8123.6) - Quartzarenite, fine-grained, well-sorted, subrounded to rounded, quartz, carbonate, sulfate, and pyrite cement.

Thin-section (8126.4) - Quartzarenite, fine-grained, well-sorted, subrounded to well-rounded, quartz, carbonate, and pyrite cement, poor porosity.

8129-31 Lime mudstone, light-gray, shaly, pyritic, ostracods, bioturbated.

8131-33.3 Shale, dark-greenish-gray, silty, calcareous, pyritic, slickensides, ostracods, carbonaceous plant fragments.

8133.3-35 Sandstone, mottled moderate-yellowish-brown, moderate-brown, and dark-yellowish-orange, very fine- to medium-grained, poorly to moderately sorted, subrounded to rounded, calcareous.

5473 Continental Oil Co. - M. Chorne et al #1, SE NW Sec. 25, T. 140 N., R. 98 W., Stark County, North Dakota. KB 2621

8044-47.3 Shale, dark-gray to black, even-parallel laminated, calcareous, pyritic, ostracods, pelecypods, brachiopods; interbedded with medium-dark-gray lime mudstone.

8047.3-55 Ostracod-pelecypod-brachiopod wackestone/packstone, medium-dark-gray to dark-gray, argillaceous, anhydritic, conglomeratic limestone at top; interbedded with dark-gray lime mudstone; interbedded

with dark-gray to black shale, lime mudstone clasts, anhydritic.

8055-71 Sandstone, very light-gray to light-gray, planar and herringbone crossbedded, very fine- to coarse-grained, moderately to well-sorted, subrounded to well-rounded, root traces at top, ostracods; interbedded with dark-gray shale laminae.

Thin-section (8055.5) - Quartzarenite, very fine- to medium-grained, poorly sorted, subangular to rounded, quartz, carbonate, and pyrite cement, poor porosity.

Thin-section (8063) - Quartzarenite, very fine- to fine-grained, moderately to well-sorted, subangular to rounded, quartz and carbonate cement, good porosity.

Thin-section (8065) - Quartzarenite, fine- to coarse-grained, poorly sorted, subrounded to well-rounded, carbonate and pyrite cement, ostracods.

Thin-section (8066) - Quartzarenite, fine- to medium-grained, moderately to well-sorted, subrounded to well-rounded, quartz, carbonate, and pyrite cement, detrital clay, authigenic kaolinite, poor porosity.

8071-75.3 Shale, medium-dark-gray to black, silty, calcareous, pyritic, ostracods, pelecypods, carbonaceous plant fragments.

8075.3-76 Shale, dark-gray, calcareous, matrix-supported "shell hash".

8076-76.8 Nodular lime mudstone, medium-dark-gray, sandy, argillaceous, shaly.

8076.8-87.6 Sandstone, very light-gray to light-gray, massive, very fine- to medium-grained, well-sorted, subrounded to rounded, calcareous, ostracods, root traces at top; interbedded with dark-gray shale laminae.

Thin-section (8078) - Quartzarenite, fine-grained, well-sorted, subrounded to rounded, quartz and carbonate cement, detrital clay, authigenic kaolinite, good porosity.

Thin-section (8083.4) - Quartzarenite, fine- to coarse-grained, poorly sorted, subrounded to well-rounded, quartz and carbonate cement, fair porosity.

Thin-section (8086) - Quartzarenite, very fine- to fine-grained, well-sorted, subangular to subrounded, quartz and carbonate cement.

8087.6-88.5 Shale, grayish-olive-green to dark-greenish-gray, calcareous, ostracods, carbonaceous plant fragments, lenticular light-colored lime mudstone.

8088.5-89.3 Nodular lime mudstone, light-gray, shaly.

8089.3-90.5 Shale, mottled medium-dark-gray, dark-gray, and very dark-red, calcareous, brachiopods.

8090.5-90.8 Sandstone, light-gray, very fine- to fine-grained, well-sorted.

8090.8-91.8 Ostracod wackestone, mottled olive-gray and dark-reddish-brown, bioturbated, shaly at base.

8091.8-92.7 Sandstone, mottled very light-gray and moderate brown, very fine- to fine-grained, well-sorted, argillaceous.

8092.7-93 Shale medium-dark-gray to dark-gray, calcareous, ostracods, pelecypods.

5525 Continental Oil Co. - Dickinson Unit #50, NW NE Sec. 21, T. 140 N., R. 96 W., Stark County, North Dakota. KB 2560

7960-61 Mudstone, mottled grayish-red, dusky-yellow, and medium-gray, sandy, calcareous.

7961-62.5 Sandstone, pale-red-purple to grayish-red-purple, planar crossbedded, very fine- to medium-grained, poorly sorted, rounded to well-rounded, calcareous; interbedded with grayish-red to light-olive-gray shale.

Thin-section (7961.2) - Quartzarenite, very fine- to coarse-grained, poorly sorted, subrounded to well-rounded, carbonate and hematite cement, ostracods.

7962.5-75.3 Mudstone, mottled grayish-red, dusky-yellow, and olive-gray, calcareous, light-colored calcareous nodules, anhydritic, ostracods, slickensides, post-depositional features.

7975.3-80 Sandstone, mottled grayish-red, yellowish-gray, and dusky-yellow, mottled, contorted bedding, very fine- to coarse-grained, poorly sorted, rounded to well-rounded, argillaceous, bioturbated, ostracods; interbedded with grayish-red, dusky-yellow, and olive-gray mudstone.

Thin-section (7975.7) - Quartzarenite, very fine- to coarse-grained, poorly sorted, subrounded to well-rounded, carbonate cement, detrital clay, ostracods.

Thin-section (7979.2) - Quartzarenite, very fine- to coarse-grained, poorly sorted, subrounded to well-rounded, carbonate and hematite cement, ostracods.

7980-82.3 Mudstone, mottled grayish-red, moderate-olive-brown, and dusky-yellow, calcareous, friable, slickensides.

7982.3-82.8 Conglomerate, lime pebbles in mud matrix, mottled grayish-red, dusky-yellow, and medium-gray.

7982.8-84.8 Mudstone, mottled grayish-red, greenish-gray, and dusky-yellow, sandy, calcareous.

7984.8-85.5 Conglomerate, lime pebbles in mud matrix, mottled grayish-red, dusky-yellow, and medium-gray.

7985.5-88.5 Mudstone, mottled grayish-red, dusky-yellow, and grayish-olive, calcareous, slickensides, post-depositional features.

7988.5-89.5 Shale, mottled medium-gray and dusky-yellow, calcareous, carbonaceous plant fragments.

7989.5-91 Conglomeratic limestone, mottled grayish-red, dusky-yellow, and light-olive-gray.

7991-94.2 Lime mudstone, very light-gray to light-gray, anhydritic, ostracods.

7994.2-8001 Mudstone, mottled grayish-red, greenish-gray, and dusky-yellow, calcareous, light-colored calcareous nodules (<4 cm), post-depositional features.

5805 A. G. Golden - Kadramas-State #1, NW SE Sec. 11, T. 139 N., R. 99 W., Stark County, North Dakota. KB 2593

8110-13.5 Shale, dark-gray, calcareous, even-parallel laminated; interbedded with medium-dark-gray lime mudstone, brachiopods, pelecypods.

8113.5-15.5 Lime mudstone, medium-dark-gray to dark-gray, argillaceous, pyritic, brecciated, dessication features, root traces, conglomeratic at top; interbedded with calcareous, dark-gray shale, ostracods.

8115.5-17.3 Algal grainstone/boundstone, medium-gray, even-parallel laminated, hydrocarbon stained.

Thin-section (8116.9) - Algal grainstone/boundstone.

8117.3-23 Shale, dark-gray to black, even-parallel to wavy-nonparallel laminated, calcareous, pyritic, ostracods, pelecypods; interbedded with medium-dark-gray ostracod-pelecypod wackestone; interbedded with dark-gray lime mudstone.

8123-26.6 Lime mudstone, medium-dark-gray to dark-gray, even-parallel laminated, argillaceous; interbedded with medium-dark-gray ostracod-pelecypod-brachiopod packstone; interbedded with dark-gray shale, lime mudstone clasts, anhydritic, pyritic, ostracods.

Thin-section (8123) - Skeletal-peloidal packstone, ostracods, pelecypods, brachiopods.

Thin-section (8125.3) - Lime mudstone.

8126.6-28.9 Shale, medium-dark-gray to black, even-parallel to wavy-nonparallel laminated, calcareous, pyritic, lime mudstone clasts, ostracods; interbedded with dark-gray lime mudstone.

8128.9-33.5 Lime mudstone, medium-dark-gray to dark-gray, very sandy, argillaceous; interbedded with medium-dark-gray ostracod-pelecypod wackestone; interbedded with dark-gray shale, pyritic, calcareous, ostracods, pelecypods.

Thin-section (8131) - Ostracod-peloidal wackestone.

8133.5-45.4 Sandstone, medium-gray to moderate-yellowish-brown to white, massive, fine-grained, well-sorted, subrounded to rounded, calcareous, pyritized root traces at top, bioturbated, hydrocarbon stained.

Thin-section (8134.3) - Quartzarenite, very fine- to medium-grained, poorly sorted, subangular to rounded, quartz, carbonate, sulfate, and pyrite cement, authigenic kaolinite.

Thin-section (8137) - Quartzarenite, fine-grained, well-sorted, subrounded to rounded, quartz cement, authigenic kaolinite, fair porosity.

Thin-section (8140.5) - Quartzarenite, very fine- to medium-grained, poorly sorted, subangular to rounded, quartz and carbonate cement, detrital clay, fair porosity.

Thin-section (8143) - Quartzarenite, fine-grained, well-sorted, subrounded to well-rounded, quartz cement, authigenic kaolinite, good porosity.

8145.4-48.7 Claystone, greenish-gray, calcareous, light-colored calcareous nodules, pyritic, carbonaceous plant fragments, root traces, slickensides.

8148.7-49.3 Siltstone, grayish-red, pyritic, ostracods.

8149.3-51.3 Claystone, mottled greenish-gray and grayish-red, calcareous, light-colored calcareous nodules, pyritic.

8151.3-57.8 Claystone, mottled greenish-gray and grayish-red, silty, calcareous, light-colored calcareous nodules, post-depositional features, rare ostracods and pelecypods.

8157.8-58.3 Skeletal wackestone, light-olive-gray, argillaceous.

8158.3-60 Claystone, mottled olive-gray and grayish-red, silty, calcareous, light-colored calcareous nodules, slickensides.

6015 Patrick Petroleum Corp.- Howie #2, NE SE Sec. 2, T. 136 N., R. 100 W., Slope County, North Dakota. KB 2766

7878-85 Shale, medium-dark-gray to dark-gray, noncalcareous to calcareous, pyritic, pelecypods, ostracods, carbonaceous plant fragments.

7885-90 Sandstone, pale-yellowish-brown to dark-yellowish-brown, medium- to coarse-grained, poorly to moderately sorted, subangular to subrounded, mud pebbles; interbedded with medium-dark-gray to dark-gray shale, silty, carbonaceous plant fragments.

7890-98.3 Sandstone, pale-yellowish-brown to dark yellowish-brown, planar and trough crossbedded, medium- to very coarse-grained, poorly to well-sorted, subangular to subrounded, argillaceous, mud pebbles, hydrocarbon stained, interbedded with dark-gray shale.

Thin-section (7891) - Quartzarenite, fine- to coarse-grained, poorly sorted, subangular to rounded, detrital clay, carbonate cement, authigenic kaolinite, fair porosity.

Thin-section (7893) - Quartzarenite, very fine- to coarse-grained, poorly sorted, subangular to rounded,

detrital clay, carbonate cement, authigenic kaolinite.

Thin-section (7897) - Quartzarenite, fine-grained, well-sorted, subrounded to well-rounded, carbonate cement, authigenic kaolinite, good porosity.

7898.3-7901 Skeletal wackestone, medium-dark-gray to dark-gray, even-parallel laminated, argillaceous, pyritic, brachiopods, pelecypods, ostracods, gastropods, crinoids, pyritized fossils; interbedded with medium-dark-gray lime mudstone; interbedded with calcareous, dark-gray shale.

7901-08 Shale, medium-dark-gray to dark-gray, noncalcareous to calcareous, pyritic, ostracods and pelecypods.

7908-08.5 Bituminous coal

7908.5-14.5 Claystone, medium-gray to medium-dark-gray, calcareous, pyritic, calcareous nodules (<1.5 cm), carbonaceous plant fragments, slickensides.

7914.5-7921 Mudstone, mottled grayish-red, dark-reddish-brown, and greenish-gray, post-depositional features, calcareous, slickensides.

7921-22 Shale, grayish-olive and olive-gray to olive-black, calcareous, brachiopods.

9096 Union Oil Co. of California - Staudinger #1-P2, SW NW Sec. 1, T. 142 N., R. 93 W., Dunn County, North Dakota. KB 2061

7210-13.8 Amsden Formation - Lime mudstone, mottled medium-gray and grayish-red-purple, intraclastic, anhydritic.

7213.8-20.8 Mudstone, mottled grayish-red, moderate-reddish-brown, dusky-yellowish-orange, and grayish-yellow-green, calcareous.

7220.8-21.8 Pelecypod-algal wackestone, mottled dusky-yellow and pale-red-purple, argillaceous.

7221.8-24 Mudstone, mottled moderate-reddish-brown, dusky-yellow, and very-dusky-red-purple.

7224-48.8 Core missing.

7248.8-51 Shale, mottled dusky-yellow and moderate-reddish-brown, calcareous, mud pebbles, light-colored

calcareous intraclasts at base; interbedded with pelecypod wackestone.

7251-55.7 Lime mudstone, mottled medium-gray, light-olive-gray, and brownish-gray, even-parallel laminated, argillaceous, brecciated near top, ostracods; interbedded with medium-gray algal grainstone/boundstone and pelecypod wackestone.

7255.7-60 Shale, mottled grayish-red and light-olive-gray, calcareous, ostracods; interbedded with light-olive-gray lime mudstone.

7260-62.4 Pelecypod-brachiopod wackestone, mottled grayish-red-purple and medium-gray, even-parallel laminated, argillaceous.

7262.4-68 Mudstone, mottled light-olive-gray and grayish-red, sandy, slightly calcareous to dolomitic.

7268-71.5 Core missing.

7271.5-75.2 Mudstone, mottled grayish-red, dark-reddish-brown, dusky-yellow, and greenish-gray, post-depositional features, anhydritic, slickensides.

7275.2-76.5 Brachiopod packstone, light-gray, argillaceous.

7276.5-86.5 Mudstone, mottled grayish-red, dark-reddish-brown, and dark-yellowish-orange, calcareous, light-colored calcareous nodules, anhydritic, post-depositional features, root traces.

7286.5-7301.7 Core missing.

7301.7-03 Skeletal wackestone, light-olive-gray, argillaceous, anhydritic, bioturbated.

7303-08 Core missing.

7308-12.4 Siltstone, mottled pale-yellowish-brown, dusky-yellow, very-dusky-red-purple, greenish-gray, and pale-red.

7312.4-18.6 Core missing.

7318.6-21 Ostracod wackestone, light-olive-gray, anhydritic, bioturbated.

7321-22 Shale, mottled grayish-red and dusky-yellow, slickensides.

7322-36 Core missing.

7336-53.5 Mudstone, mottled grayish-red, medium-light-gray, very-dusky-red-purple, and dusky-yellow, sandy, post-depositional features, root traces, carbonaceous plant fragments; interbedded with conglomerates composed of mud pebbles.

7353.5-65 Shale, mottled dark-reddish-brown, dusky-red, medium-dark-gray, and greenish-gray.

7365-68.8 Core missing.

7368.8-77 Mudstone, mottled dark-reddish-brown, grayish-red, light-olive-gray, and medium-dark-gray, slickensides; interbedded with grayish-red, fine-grained sandstone; interbedded with conglomerates composed of mud pebbles.

10688 Union Texas Petroleum Corp. - Volesky #7-2, SW SE Sec. 7, T. 140 N., R. 98 W., Stark County, North Dakota. KB 2622

8150-55 Amsden Formation - Lime mudstone, light-gray to medium-dark-gray, argillaceous, shaly.

8155-57.3 Mudstone, mottled brownish-gray and olive-gray, calcareous.

8157.3-60 Mudstone, brownish-gray to grayish-red-purple, calcareous, slickensides, ostracods, iron oxide concretions, post-depositional features; interbedded with moderate-orange-pink nodular anhydrite.

8160-8165 Mudstone, mottled dark-reddish-brown, greenish-gray, and light-olive-gray, calcareous, post-depositional features, slickensides, ostracods.

8165-80 Not cored.

8180-87.5 Lime mudstone, medium-gray to dark-gray, argillaceous; interbedded with medium-dark-gray, ostracod-pelecypod wackestone/packstone, oncolite-pelecypod-ostracod packstone, and algal grainstone/boundstone, anhydritic, hydrocarbon stained; interbedded with noncalcareous, dark-gray to black shale; dark-gray shale at base.

Thin-section (8186.5) - Oncolite-ostracod-pelecypod-peloidal packstone.

8187.5-94 Quartz sand wackestone, mottled light-olive-gray and olive-gray, dolomitic, dark mottling due to iron sulfide

Thin-section (8192.5) - Quartz sand wackestone, dolomitic, iron sulfide.

8194-8200 Sandstone, very light-gray to medium-light-gray, planar crossbedded, very fine- to medium-grained, well-sorted, subrounded to rounded, calcareous, pyritic; interbedded with dark-gray shale laminae.

Thin-section (8196) - Quartzarenite, fine- to coarse-grained, poorly sorted, rounded to well-rounded, quartz and sulfate cement, authigenic kaolinite, good porosity.

Thin-section (8198.3) - Quartzarenite, very fine- to fine-grained, well-sorted, angular to rounded, quartz and carbonate cement.

11529 Nance Petroleum Corp. - Steffan #7-26, SW NE Sec. 26, T. 140 N., R. 96 W., Stark County, North Dakota. KB 2524

7790-94 Mudstone, mottled grayish-red, greenish-gray, dusky-yellow, and grayish-purple, light-colored slightly calcareous to dolomitic nodules, slickensides.

7794-94.5 Lime mudstone, light-olive-gray, anhydritic, ostracods, bioturbated.

7794.5-96.3 Conglomerate, lime pebbles in mud matrix, mottled grayish-red and dusky yellow.

7796.3-98.3 Sandstone, grayish-red, very fine-grained, argillaceous, calcareous, ostracods; interbedded with grayish-red shale laminae.

7798.3-7804 Shale, mottled grayish-red, dusky-yellow, greenish-gray, and light-olive-gray, calcareous, post-depositional features, ostracods.

7804-06 Skeletal wackestone, medium-gray, even-parallel laminated, argillaceous, matrix-supported "shell hash".

7806-07.7 Shale, blackish-red, calcareous, ostracods, pelecypods.

7807.7-09.3 Lime mudstone, mottled medium-dark-gray and dark-reddish-brown, even-parallel laminated, argillaceous, ostracods; interbedded with calcareous, dark-gray to dark-reddish-brown shale.

7809.3-10.5	Mudstone, mottled olive-gray and dark-reddish-brown, sandy, light-colored calcareous nodules.
7810.5-18.2	Lime mudstone, mottled medium-dark-gray, dark-gray, and grayish-red, even-parallel laminated, argillaceous, desiccation features, conglomeratic limestone at top; interbedded with ostracod-pelecypod wackestone/packstone and algal grainstone/boundstone, hydrocarbon stained; interbedded with calcareous, dark-gray to grayish-red shale.
7818.2-21	Shale, dark-gray to black, sandy, calcareous, ostracods, pelecypods; interbedded with medium-dark-gray, very fine-grained sandstone.
7821-28	Quartz sand wackestone, medium-dark-gray to dark-gray, nodular, argillaceous, root traces, dark mottling due to iron sulfide.
7828-30	Sandstone, yellowish-gray, fine-grained, well-sorted, subrounded to rounded, calcareous, pyritic, contorted near base.
7830-32.5	Mudstone, mottled grayish-red, greenish-gray, and dusky-yellow, sandy, calcareous.
7832.5-37	Sandstone, brown, fine-grained, well-sorted, subrounded to rounded, calcareous; interbedded with dusky-yellow and olive-black shale near base; interbedded with light-colored lime mudstone.
7837-37.8	Skeletal packstone, yellowish-gray, argillaceous, stylolites.
7837.8-38	Shale, olive-black, calcareous, light-colored calcareous nodules.
7838-39	Conglomerate, lime pebbles in mud matrix, mottled grayish-red, greenish-gray, and dusky-yellow, slickensides.
7839-50	Mudstone, mottled grayish-red, greenish-gray, and dusky-yellow, calcareous, light-colored slightly calcareous to dolomitic nodules, root traces, post-depositional features, slickensides; interbedded with grayish-red siltstone and fine- to medium-grained sandstone.

APPENDIX B

Name and Location of Oil Well Logs, Tyler Formation Top and Bottom Picks, Formation Thicknesses, and Sandstone Thicknesses

Well numbers are those of the North Dakota Geological Survey and are listed by location. Locations are based on the Standard Land Office Grid System. Under the location headings T, R, S, and QQ stand for township, range, section, and first and second quarter of the section, respectively. All townships are north and all ranges are west of the principal baseline and meridian. Operator and well name are from the North Dakota Geological Survey files. Stratigraphic abbreviations are as follows: (TT) Top of the Tyler Formation, (TB) Bottom of the Tyler Formation, (TTh) Thickness of the Tyler Formation, (BS) Thickness of the Basal Sandstone, and (MS) Thickness of the Middle Sandstone. All depths are given as feet below the Kelly Bushing (KB). All thicknesses are given in feet.

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
8993	149	80	26	SESW	ATLANTIC RICHFIELD CO. KLAIN #1	1995	4470	4555	85	0	0
8696	149	83	1	SESE	MITCHELL ENERGY CORP. THOMPSON #1-1	2054	5000	5100	100	0	0
5126	149	86	16	NWSW	GENERAL CRUDE OIL CO. STATE #1	2227	6237	6330	93	0	0
10409	149	86	34	NESE	SHELL OIL CO. CHRISTOPHERSON #44-34	2099	6092	6200	108	0	0
1194	149	90	5	NWNE	CALVERT DRILLING CO. GEORGE S. WOLF #1	1989	7090	7223	133	0	0
793	149	91	22	SENW	MOBIL PROD. CO. PEGASUS DIV. SOLOMON BIRD BEAR	2102	7387	7510	123	0	4
7214	149	92	33	SESE	EXXON CORP. BULL FAMILY #1	2363	7762	7927	165	0	45
8095	149	93	17	SWNW	SHELL OIL CO. PACKINEAU BIA #12-17	2330	7907	8077	170	0	0
9040	149	93	21	SWNW	APACHE CORP. HARMON #1	2241	7805	7970	165	0	0
607	149	93	24	SWNE	SOCONY-VACUUM OIL ANGUS KENNEDY F32-24-P	2149	7685	7850	165	0	0
9722	149	94	16	SWNW	AMAREX, INC. BERG #1	2417	8045	8225	180	0	0
9037	149	94	21	SESE	AMAREX, INC. FETTIG #1	2335	7970	8125	155	0	0
9676	149	95	3	NWSE	TEXACO, INC. LYLE HENDERSON TRUST #1	2384	7940	8130	190	0	10
1744	149	95	7	NESW	AMERADA PETROL. CORP. WHERELY-RISSER-OLSON #1	2429	7980	8165	185	0	0
277	149	95	16	NENE	AMERADA PETROL. CORP. N.DAK. "B" TRACT 2 #1	2364	7973	8155	182	0	0
5936	149	95	29	NWNE	ASHLAND OIL, INC. NELSEN #1-29	2294	7970	8130	160	0	20
8366	149	95	30	SWNW	CONSOLIDATED CRUDE OIL CO. FEDERAL #1-30	2552	8150	8310	160	0	0
7758	149	95	32	SWNE	LEAR PETROL. EXPLOR., INC. KATRINA #1	2461	8160	8315	155	0	0
10977	149	96	1	SESW	S & J OPERATING CO. BELLIN 1-1	2376	7935	8105	170	0	4
9217	149	96	3	SENW	AMAREX, INC. ANDERSON #1	2390	7920	8130	210	0	12
208	149	96	11	NENW	AMERADA PETROL. CORP. W. B. CROFF #1	2373	7970	8145	175	0	0
9334	149	96	12	NENW	BROSCHAT ENGINEERING-JOGRUSS OIL CORP. KIRKLAND #1	2335	7890	8070	180	0	0
33	149	96	12	SWSE	AMERADA PETROL. CORP. BENHOMER RISSER #1	2438	7965	8140	175	0	0
933	149	96	13	NENE	AMERADA PETROL. CORP. ORAN OLSON #1	2486	8015	8200	185	0	0
987	149	96	13	NESW	AMERADA PETROL. CORP. HELMER KNUTSON TR 1 #1	2520	8055	8250	195	0	0
11624	149	96	13	NWSE	FLYING J EXPLOR. & PROD. CO. ANDERSON 10-13	2507	8065	8245	180	0	0
861	149	96	13	SWNE	AMERADA PETROL. CORP. ANDERSON OLSON U. #1	2504	8050	8205	155	0	25
10633	149	96	19	NWNW	CONOCO, INC. CONOCO FEDERAL 19 #1	2048	7757	7945	188	0	0
8471	149	96	22	NENW	APACHE CORP. FEDERAL #22-1	2406	8075	8260	185	0	0
6368	149	96	24	SESE	HANSON OIL CORP. CCOC FEDERAL #1-24	2499	8060	8250	190	0	0
1971	149	96	25	NENE	AMERADA PETROL. CORP. BEAR DEN UNIT #2	2514	8115	8290	175	0	0
5513	149	96	25	NENW	ADOBE INVEST. CORP. FEDERAL "25" #1	2338	7935	8120	185	0	0
1469	149	96	25	NESE	AMERADA PETROL. CORP. BEAR DEN UNIT #1	2408	8010	8180	170	0	0
11913	149	96	25	NWSE	FLYING J EXPLOR. & PROD. CO. BEAR DEN UNIT 4	2520	8120	8300	180	0	4
2750	149	96	36	NENE	AMERADA PETROL. CORP. BEAR DEN UNIT #3	2137	7750	7925	175	0	3

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
4085	149	97	2	SESE	AMERADA PETROL. CORP. USA DORIS UNIT #1	2212	7830	8028	198	0	6
7531	149	97	12	SWNW	W. C. KIRKWOOD FEDERAL #12-12	2191	7790	7990	200	0	7
6826	149	97	19	NENW	SAMEDAN OIL CORP. KELLY #1	2244	8125	8328	203	0	0
9378	149	97	19	SENW	DIAMOND SHAMROCK CORP. CIMARRON FEE #22-19	2189	8060	8265	205	0	0
11442	149	97	26	NWSE	PHILLIPS PETROL. CO. MOBY DICK FEDERAL 1-43-26	1997	7770	7965	195	0	4
9180	149	98	3	SESE	POGO PRODUCING CO. JOHNSRUD #1-3	2220	8155	8360	205	0	0
9456	149	98	11	NWNW	POGO PRODUCING CO. BETTY BERG #1-11	2244	8170	8378	208	0	0
3157	149	98	11	NWSE	CAROLINE HUNT TRUST ESTATE MARTIN NELSON #1-A	2232	8162	8357	195	0	0
11096	149	99	2	SWSW	SOUTHERN UNION EXPLOR. CO. NORSTOG 2-13	2125	8005	8230	225	0	40
6925	149	99	3	SESE	ALPAR RES., INC. NORSTOG #1-3	2121	8008	8230	222	0	30
7655	149	99	3	SESE	ALPAR RES., INC. NORSTOG #1A-3	2126	8008	8230	222	0	30
8331	149	99	4	NESW	TERRA RES., INC. JOHNSON #1-4	2168	8090	8288	198	0	0
7997	149	99	8	NESW	AMOCO PROD. CO. MORK #1	2179	8050	8265	215	0	0
7226	149	99	10	NENW	AMOCO PROD. CO. SONDROL #1	2167	8083	8293	210	0	0
6493	149	99	10	SENE	ALPAR RES., INC. ROBERT PETERSON #1-10	2127	8025	8235	210	0	5
5866	149	99	11	NWSW	KERR-MCGEE CORP. ROBERT PETERSON #1	2194	8095	8300	205	0	0
7203	149	99	14	NWSE	AMOCO PROD. CO. WILBUR CAMPBELL #1	2224	8160	8351	191	0	0
7141	149	99	14	SWSW	ALPAR RES., INC. HAMRE #1-14	2366	8290	8490	200	0	0
10464	149	99	15	SESE	LADD PETROL. CORP. HAMRE #1-15	2371	8312	8500	188	0	0
7943	149	99	23	NENW	AMOCO PROD. CO. HAMRE #1	2380	8305	8505	200	0	0
7219	149	99	33	SWNW	AMOCO PROD. CO. MINNESOTA FARMS #1	2227	8135	8330	195	0	0
9635	149	99	35	NESW	PLACID OIL CO. EIDE #35-11	2352	8250	8442	192	0	0
8156	149	100	6	NENE	PETROL., INC. THOMPSON #1	2399	8210	8413	203	0	0
7879	149	100	22	NENE	CHAMPLIN PETROL. CO. STATE-ROGNESS 41-22 #1	2209	8050	8253	203	0	0
8171	149	100	23	SWNW	CHAMPLIN PETROL. CO. MCGREGOR 12B-23 #2	2210	8060	8260	200	0	5
10816	149	101	11	SESW	HNG OIL CO. NEER 11 1	2370	8148	8343	195	0	0
11282	149	101	14	NENW	HNG OIL CO. BELL 14 1	2313	8083	8277	194	0	0
10889	149	101	18	NENE	CHIEFTAIN INTERNATIONAL, INC. PARKER 1	2254	8007	8210	203	0	35
9249	149	101	20	SENW	KENAI OIL & GAS, INC. CHITWOOD #20-22	2279	8050	8225	175	0	0
8302	149	101	24	NWSE	TRAVERSE OIL CO. NYGAARD #1-24	2418	8205	8402	197	0	0
9532	149	101	29	SESW	SUNBEHM GAS, INC. BOTTKE #29-14	2264	8040	8217	177	0	0
8717	149	101	32	SWNE	SUNBEHM GAS, INC. CHITWOOD #32-7	2304	8096	8250	154	0	0
8961	149	101	35	NENW	HNG OIL CO. NYGAARD #35-1	2436	8250	8425	175	0	0
7715	149	102	1	SWSE	SUNBEHM GAS, INC. POWELL #1	2309	8050	8258	208	0	0
7041	149	102	4	NWSW	SUNBEHM GAS, INC. SANDERS #1	2290	7953	8165	212	0	55

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
7017	149	102	5	NESW	SUNBEHM GAS, INC. NORMAN ROD #2	2344	8040	8242	202	0	5
6907	149	102	5	SWNE	SUNBHEM GAS, INC. NORMON ROD #1	2313	8000	8200	200	0	50
8592	149	102	32	NWSW	W. H. HUNT TRUST ESTATE CROSS #1	2426	8155	8320	165	0	0
7478	149	102	35	SENW	SUNBEHM GAS, INC. ORVILLE HAUGEN #1	2395	8160	8310	150	0	0
7306	149	102	35	SESE	SUNBEHM GAS, INC. OKLAND #1	2402	8175	8328	153	0	0
11108	149	102	35	SESE	SUPERIOR OIL CO. OKLAND 35-44	2406	8157	8314	157	0	4
8002	149	102	36	SWSE	SUNBEHM GAS, INC. OKLAND #2	2356	8120	8282	162	0	0
8161	149	103	6	NWNW	PENNZOIL CO. YELLOWSTONE #6-11 F	2182	7807	7962	155	0	0
9750	149	103	8	SESW	PUMA PETROL. CO. FARMERS UNION FEDERAL #1-8	2377	8040	8207	167	0	0
8094	149	103	9	SESW	GETTY OIL CO. CHARBONNEAU #9-14	2285	7950	8128	178	0	0
8898	149	103	16	NENW	PUMA PETROL. CO. AMERADA STATE #1-16	2281	7945	8117	172	0	0
10152	149	103	16	NWNW	PUMA PETROL. CO. AMERADA STATE #1-16X	2321	7967	8143	176	0	0
11072	149	103	18	E2NW	PUMA PETROL. CO. PASCHKE 3-18	2127	7728	7909	181	0	0
9163	149	103	18	NENW	PUMA PETROL. CO. PASCHKE #2-18	2143	7726	7905	179	0	0
7957	149	103	18	NESW	PUMA PETROL. CO. KEITH WINTER #1-18	2079	7685	7865	180	0	0
8905	149	103	25	SWSW	PATRICK PETROL. CO. HIGHLAND FEDERAL #1-15	2309	7973	8172	199	0	55
7640	149	103	28	SENW	SHELL OIL CO. USA #22-28	2212	7875	8050	175	0	0
8409	149	103	34	SWNE	PATRICK PETROL. CO. WINTER-FEDERAL #1-34	2375	8045	8216	171	0	0
8992	149	104	4	NWNW	SHELL OIL CO. USA 11-4-76	2055	7600	7743	143	0	0
7647	149	104	4	SESW	SHELL OIL CO. USA #44-4	2204	7750	7900	150	0	0
8427	149	104	14	NWSW	GETTY OIL CO. CHENEY #14-12	2325	7910	8072	162	0	0
6893	149	104	16	SWSW	BROWNLIE, WALLACE, ARMSTRONG & BANDER STATE #16-14	2094	7640	7802	162	0	0
8154	149	104	17	NESE	DOME PETROL. CORP. FEDERAL #4-17	2064	7607	7767	160	0	0
8348	149	104	17	SENE	DOME PETROL. CORP. FEDERAL #3-17	2125	7675	7834	159	0	0
7687	149	104	17	SESW	DOME PETROL. CORP. FEDERAL #1-17	1980	7512	7677	165	0	0
6807	149	104	18	SWSE	TENNECO OIL CO. VINYARD #2-18	2122	7650	7807	157	0	0
6706	149	104	19	NESE	SHELL OIL CO. USA #43-19-15	2136	7650	7818	168	0	0
8237	149	104	19	SWNE	SHELL OIL CO. USA #32-19-110	2153	7682	7845	163	0	0
7267	149	104	20	SESW	KERR-MCGEE CORP. BURNS #2-20	2098	7626	7790	164	0	0
7303	149	104	20	SWNW	KERR-MCGEE CORP. BURNS #3-20	2104	7633	7795	162	0	0
6773	149	104	20	SWSE	KERR-MCGEE CORP. BURNS #1-20	2045	7580	7745	165	0	0
7209	149	104	21	SESE	SHELL OIL CO. BURNS #44-21	2230	7772	7941	169	0	0
7253	149	104	21	SWSW	KERR-MCGEE CORP. BURNS #1-21	2146	7677	7838	161	0	0
7790	149	104	22	NWSW	SHELL OIL CO. USA #13-22-51	2301	7840	8007	167	0	0
6776	149	104	23	SWNE	SHELL OIL CO. USA #32-23-21	2330	7902	8070	168	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
8184	149	104	25	SWSW	SHELL OIL CO. USA #14-25-111	2445	8047	8208	161	0	0
7844	149	104	26	NENE	DOME PETROL. CORP. FEDERAL #3-26	2464	8015	8190	175	0	0
7721	149	104	26	NESE	DOME PETROL. CORP. FEDERAL #2-26	2331	7900	8062	162	0	0
7498	149	104	26	SESW	DOME PETROL. CORP. FEDERAL #1-26	2213	7796	7950	154	0	0
7358	149	104	28	SESW	KERR-MCGEE CORP. CHRIS #3-28	2089	7615	7785	170	0	0
7051	149	104	28	SWNW	KERR-MCGEE CORP. BURNS #1-28	2120	7640	7809	169	0	0
6869	149	104	29	NENE	KERR-MCGEE CORP. BURNS #1-29	2101	7635	7803	168	0	0
7302	149	104	29	NENW	KERR-MCGEE CORP. BURNS #2-29	2109	7630	7800	170	0	0
7304	149	104	29	NWSE	KERR-MCGEE CORP. BURNS #3-29	2090	7627	7778	151	0	0
6707	149	104	29	NWSW	SHELL OIL CO. USA #13-29-16	2215	7740	7905	165	0	0
6408	149	104	30	NWSE	SHELL OIL CO. USA #33X-30-7	2270	7763	7933	170	0	0
5821	149	104	31	SWSE	SHELL OIL CO. U. S. GOV'T. #34X-31-1	2128	7610	7772	162	0	0
7359	149	104	32	NWNE	KERR-MCGEE CORP. RAU #1-32	2113	7637	7793	156	0	0
7372	149	104	32	NWSE	SHELL OIL CO. USA #33-32-87	2119	7655	7815	160	0	0
6393	149	104	32	NWSW	SHELL OIL CO. USA #13X-32-6	2241	7750	7905	155	0	0
7357	149	104	33	NENE	KERR-MCGEE CORP. RAU #1-33	2121	7680	7840	160	0	0
6611	149	104	33	SWSW	SHELL OIL CO. USA #14-33-10	2161	7725	7883	158	0	0
7048	149	104	34	NENW	DOME PETROL. CORP. BURNS #3-34	2128	7700	7850	150	0	0
7663	149	104	34	NESE	DOME PETROL. CORP. DOME FEDERAL #4-34	2196	7747	7900	153	0	0
7047	149	104	34	NESW	DOME PETROL. CORP. FEDERAL #2-34	2178	7783	7937	154	0	0
6908	149	104	34	SWNE	DOME PETROL. CORP. BURNS #1-34	2159	7715	7870	155	0	0
7239	149	104	35	NWNW	DOME PETROL. CORP. BURNS #1-35	2186	7770	7925	155	0	0
7925	149	104	35	NWSW	DOME PETROL. CORP. FEDERAL #3-35	2212	7788	7941	153	0	0
7733	149	104	35	SWNE	DOME PETROL. CORP. BURNS #2-35	2219	7803	7960	157	0	0
8102	149	104	35	SWSE	DOME PETROL. CORP. FEDERAL #4-35	2224	7800	7955	155	0	0
8297	149	104	36	NWSW	DOME PETROL. CORP. STATE #1-36	2290	7898	8053	155	0	0
8702	149	104	36	SWSE	DOME PETROL. CORP. STATE #2-36	2256	7865	8020	155	0	0
3076	150	79	14	SENW	I. J. WILHITE ARNOLD TARASENKO #1	2089	0	0	0	0	0
3089	150	80	14	NWNW	CARDINAL PETROL. CO. & NATIONAL BULK CARRIERS CARL ECKLUND #1	2006	0	0	0	0	0
49	150	80	28	SWSW	STANOLIND OIL & GAS CO. MCLEAN COUNTY #1	2100	0	0	0	0	0
8807	150	82	16	SENW	MITCHELL ENERGY CORP. HAUF #1-16	2121	5035	5100	65	0	0
10537	150	85	6	SESE	SHELL OIL CO. SAYLER/VOELLER #44-6	2207	5908	6000	92	0	20
8310	150	86	27	SESE	MITCHELL ENERGY CORP. HOPKINS #1-27	2162	6055	6145	90	0	0
8373	150	88	9	NWNW	DOME PETROL. CORP. FORSMAN #1-9	2094	6540	6695	155	0	45

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
5826	150	88	29	SESE	SAMEDAN OIL CORP. MYRTLE JORSENGON #1	1999	6520	6680	160	0	0
6766	150	89	12	NWNW	BWAB, INC. PAULSON #12-11	2019	6590	6747	157	0	10
9512	150	89	25	NENW	MITCHELL ENERGY CORP. HENDRICKSON #1-25	1982	6600	6912	312	0	60
7783	150	90	1	SENW	HOME PETROL. CORP. TRIBAL #1-1	2212	7020	7200	180	0	0
2695	150	92	9	NENW	HUNT OIL CO. JOSEPHINE DANCING BULL ET AL #1	2115	7575	7743	168	0	20
7457	150	92	20	NWNE	APACHE CORP. GRACE #1-20	2146	7590	7740	150	0	0
4113	150	93	4	SENW	TEXACO, INC. FORT BERTHOLD ALLOTTEE 437 #A1	2198	7750	7957	207	0	15
11680	150	94	19	NESW	GRUSS PETROL. MANAGEMENT STERUD 19-1	2202	7680	7910	230	0	10
1309	150	94	20	SESW	ANSCHUTZ CORP. R. S. MATTHEWS #1	2077	7610	7835	225	0	70
7673	150	94	20	SWSW	HELMERICH & PAYNE, INC. MATTHEW #1-20	2231	7725	7940	215	0	35
8179	150	94	23	NWSE	APACHE CORP. BEAR DEN #1	2220	7935	8120	185	0	10
2383	150	94	30	NWNE	GULF OIL CORP. LAWRENCE BIRD BILL #1	2167	7660	7880	220	0	15
3731	150	94	33	NWSW	OCCIDENTAL PETROL. CORP. AUDREY RABBIT HEAD HALL #1	2334	7940	8123	183	0	0
1798	150	95	2	SESW	AMERADA PETROL. CORP. W. S. BELQUIST "A" #1	2273	7720	7933	213	0	6
2561	150	95	4	NWNW	TEXACO, INC. V. E. BUDAHN #2	2275	7570	7800	230	0	0
2600	150	95	4	NWSE	TEXACO, INC. E. C. OLSON #1	2277	7602	7833	231	0	4
1931	150	95	4	NWSW	TEXACO, INC. V. E. BUDAHN #1	2264	7574	7815	241	0	0
2422	150	95	4	SENW	TEXACO, INC. E. E. OLSON-V. E. BUDAHN U. #1	2249	7563	7793	230	0	5
2393	150	95	4	SESW	TEXACO, INC. R. L. OLSON #6	2210	7527	7770	243	0	5
9944	150	95	4	SWSE	TEXACO, INC. E. C. OLSON #3	2260	7572	7805	233	0	0
9737	150	95	4	SWSW	TEXACO, INC. R. L. OLSON #11	2270	7585	7828	243	0	0
12173	150	95	5	C NW	TEXACO, INC. C. M. LOOMER #16	2417	7655	7894	239	0	0
2516	150	95	5	NWNE	AMERADA PETROL. CORP. LOOMER UNIT #7	2377	7658	7875	217	0	0
1737	150	95	5	NWNW	AMERADA PETROL. CORP. LOOMER UNIT #3	2406	7647	7885	238	0	7
8229	150	95	5	NWNW	TEXACO, INC. C. M. LOOMER #13	2407	7635	7878	243	0	0
2428	150	95	5	NWSE	AMERADA PETROL. CORP. LOOMER UNIT #5	2359	7630	7877	247	0	0
1738	150	95	5	NWSW	AMERADA PETROL. CORP. LOOMER UNIT #4	2357	7590	7830	240	0	0
2518	150	95	5	SENE	AMERADA PETROL. CORP. LOOMER UNIT #9	2340	7627	7862	235	0	0
2517	150	95	5	SENW	AMERADA PETROL. CORP. LOOMER UNIT #8	2389	7637	7883	246	0	0
1918	150	95	5	SESE	TEXACO, INC. R. L. OLSON #2	2352	7660	7905	245	0	6
2485	150	95	5	SESW	AMERADA PETROL. CORP. LOOMER UNIT #6	2327	7590	7823	233	0	0
7810	150	95	5	SESW	TEXACO, INC. LOOMER #11	2339	7590	7825	235	0	0
10748	150	95	6	NENE	TEXACO, INC. B. B. M. U. J406	2393	7620	7855	235	0	0
8081	150	95	6	NESE	TEXACO, INC. LOOMER #12	2357	7585	7820	235	0	0
10957	150	95	6	NESW	TEXACO, INC. C. LOVAAS (NCT-1) 7	2370	7650	7840	190	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
1444	150	95	6	NWNE	TEXACO, INC. LOUAAS #1	2395	7630	7855	225	0	5
3075	150	95	6	NWNW	TEXACO, INC. REITSCH-LOVAAS UNIT #1	2383	7675	7903	228	0	0
1824	150	95	6	NWSE	PAN AMERICAN PETROL. CORP. PETER SHANE #1	2345	7580	7812	232	0	0
3018	150	95	6	NWSW	TEXACO, INC. LOUAAS-DANLGREN #1	2343	7635	7830	195	0	0
7874	150	95	6	NWSW	TEXACO, INC. LOVAAS NCT-1 #6	2385	7635	7855	220	0	0
1542	150	95	6	SENE	AMERADA PETROL. CORP. LOOMER UNIT #1	2369	7595	7830	235	0	0
2016	150	95	6	SENW	TEXACO, INC. C. LOUAAS #3	2394	7637	7868	231	0	7
1736	150	95	6	SESE	AMERADA PETROL. CORP. LOOMER UNIT #2	2348	7597	7832	235	0	7
1497	150	95	6	SESW	TEXACO, INC. C. LOOMER #1	2371	7618	7860	242	0	0
11643	150	95	6	SWNE	TEXACO, INC. C. LOVAAS NCT-1 8	2390	7610	7842	232	0	0
10947	150	95	7	NENW	TEXACO, INC. J. S. RICE 1	2396	7680	7900	220	0	0
1881	150	95	7	NWNE	TEXACO, INC. C. M. LOOMER #3	2331	7660	7853	193	0	0
1731	150	95	7	NWNW	TEXACO, INC. G. BROWN #1	2380	7735	7910	175	0	0
2372	150	95	7	NWSE	TEXACO, INC. M. MOSHOLDER #2	2306	7600	7830	230	0	0
1598	150	95	7	SENE	TEXACO, INC. M. MOSHOLDER #1	2296	7604	7793	189	0	0
3762	150	95	7	SENW	CALVERT DRILLING CO. GEORGE BROWN #1	2316	7595	7824	229	0	0
2573	150	95	7	SESE	TEXACO, INC. M. MOSHOLDER #3	2288	7592	7830	238	0	0
8083	150	95	7	SWNE	TEXACO, INC. MOSHOLDER #4	2382	7660	7885	225	0	0
9069	150	95	8	NENE	TEXACO, INC. R. L. OLSON #9	2357	7660	7905	245	0	6
1848	150	95	8	NWNE	TEXACO, INC. R. L. OLSEN 1	2320	7604	7843	239	0	0
1897	150	95	8	NWNW	TEXACO, INC. C. M. LOOMER 4	2361	7625	7860	235	0	0
1760	150	95	8	NWSE	TEXACO, INC. R. W. JONES 1	2306	7588	7820	232	0	0
2146	150	95	8	NWSW	TEXACO, INC. LOOMER MOSHOLDER #1	2350	7635	7870	235	0	5
1980	150	95	8	SENE	TEXACO, INC. F. W. JONES 2	2299	7603	7850	247	0	15
1723	150	95	8	SENW	TEXACO, INC. C. M. LOOMER 2	2311	7595	7830	235	0	0
9558	150	95	8	SENW	TEXACO, INC. C. M. LOOMER #5	2331	7600	7835	235	0	0
1803	150	95	8	SESE	TEXACO, INC. G. LEVANG 1	2315	7623	7850	227	0	5
9414	150	95	9	C NW	TEXACO, INC. R. L. OLSON #10	2354	7670	7900	230	0	0
10132	150	95	9	NESE	AMERADA HESS CORP. F. W. JONES #9-43	2205	7632	7850	218	0	0
2502	150	95	9	NWNE	TEXACO, INC. F. I. MYERS 1	2203	7520	7750	230	0	4
2423	150	95	9	NWNW	TEXACO, INC. OLSON-MYERS UNIT #1	2340	7660	7908	248	0	8
1902	150	95	9	NWSE	TEXACO, INC. F. W. JONES TRACT 2 #1	2320	7647	7860	213	0	0
2116	150	95	9	NWSW	TEXACO, INC. R. L. OLSON 3	2282	7595	7815	220	0	4
1800	150	95	9	SENE	TEXACO, INC. FRANK MYERS 1	2259	7580	7800	220	0	0
2256	150	95	9	SENW	THE TEXAS CO. R. L. OLSON #5	2349	7668	7897	229	0	4

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
1716	150	95	9	SESE	TEXACO, INC. R. L. OLSON 1	2316	7648	7860	212	0	0
2255	150	95	9	SESW	TEXACO, INC. R. L. OLSON 4	2284	7605	7820	215	0	3
10247	150	95	10	NESW	AMERADA HESS CORP. L. WHEELER #10-23	2360	7683	7895	212	0	0
1861	150	95	10	NWSE	TEXACO, INC. W. J. WHEELER 1	2224	7553	7768	215	0	0
1939	150	95	10	NWSW	TEXACO, INC. L. WHEELER 1	2337	7660	7875	215	0	0
2152	150	95	10	SENW	TEXACO, INC. L. WHEELER 2	2194	7520	7740	220	0	0
1758	150	95	10	SESW	TEXACO, INC. W. S. BELQUIST 1	2340	7665	7875	210	0	0
2032	150	95	15	NWNE	AMERADA PETROL. CORP. F. W. JONES TRACT 1 #2	2279	7634	7840	206	0	0
3537	150	95	15	NWNW	TEXACO, INC. W. S. BELQUIST 1	2250	7575	7780	205	0	0
1792	150	95	15	SESE	AMERADA PETROL. CORP. F. W. JONES T-1 #1	2208	7600	7815	215	0	0
1938	150	95	16	NWNE	TEXACO, INC. NORTH DAKOTA "J" 1	2252	7582	7790	208	0	0
303	150	95	16	SWSW	AMERADA PETROL. CORP. N.DAK. "B" TR-3 #1	2263	7610	7820	210	0	4
2050	150	95	17	NWNW	CALVERT DRILLING CO. G. V. LEVANG #1	2325	7638	7871	233	0	0
6394	150	95	17	NWSE	ALPAR RES., INC. LEVANG #1-17	2327	7690	7915	225	0	0
9185	150	95	17	W2NE	TEXACO, INC. G. V. LEVANG (NCT-1) #1	2359	7695	7923	228	0	4
9562	150	95	18	NENE	TEXACO, INC. G. V. LEVANG "B" #1	2327	7670	7895	225	0	0
1459	150	95	18	NENW	AMERADA PETROL. CORP. GORDON LEVANG #1	2320	7660	7900	240	0	0
6608	150	95	19	SWSE	ALPAR RES., INC. JOHN PHELPS #1-19	2342	7813	8010	197	0	0
11295	150	95	21	C SW	HARPER OIL CO. BERWALD FEDERAL 11-21	2332	7705	7910	205	0	0
5934	150	95	23	NESW	OIL DEVELOP. CO. OF TEXAS VANG ET AL #1	2247	7680	7895	215	0	0
6248	150	95	33	NWSW	ADOBE INVEST. CORP. HENDERSON #1	2271	7795	8010	215	0	0
1420	150	95	34	NWSE	AMERADA PETROL. CORP. P. L. HENDERSON #1	2260	7755	7963	208	0	0
8632	150	96	1	NWNE	TEXACO, INC. H. O. BROWN #1	2400	7792	7985	193	0	0
10363	150	96	2	NENE	TEXACO, INC. C. LOVAAS NCT-2 #1	2462	7900	8045	145	0	0
1816	150	96	2	SWNW	CONTINENTAL SIGNALNESS #1	2382	7745	7950	205	0	0
5878	150	96	2	SWSW	SOUTHERN UNION PROD. CO. SIGNALNESS #1	2397	7790	7995	205	0	0
9519	150	96	3	NWSE	TENNECO OIL CO. TANK #1-3	2391	7760	7970	210	0	0
5775	150	96	5	NWSW	H. A. CHAPMAN KERR #1	2403	7765	7980	215	0	0
1560	150	96	5	SWNE	TEXACO, INC. M. SIGNALNESS #1	2384	7745	7960	215	0	0
8758	150	96	5	SWSE	PATRICK PETROL. CO. KERR #1-5	2338	7730	7935	205	0	0
1412	150	96	5	SWSW	TEXACO, INC. C. KERR #1	2413	7775	7995	220	0	0
5351	150	96	7	NENE	RAINBOW RES., INC. DUNDAS #1-7	2362	7740	7955	215	0	0
5249	150	96	8	NENW	RAINBOW RES., INC. C. W. KERR #1-A	2381	7775	7978	203	0	0
10988	150	96	10	NWSE	TEXACO, INC. TEXACO ET AL STATE OF N. D. "D" 1	2391	7770	8000	230	0	0
9131	150	96	10	SENW	DOME PETROL. CORP. SIGNALNESS #1-10	2316	7700	7924	224	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10754	150	96	10	SENW	TEXACO, INC. TEXACO ET AL L. SIGNALNESS 1X-10	2317	7690	7915	225	0	0
7886	150	96	15	SWNE	HILLIARD OIL & GAS, INC. LILLIBRIDGE #1	2300	7710	7940	230	0	0
1854	150	96	17	SWSE	AMERADA PETROL. CORP. SIDNEY VEEDER TR-1 #1	2366	7810	8040	230	0	0
8816	150	96	17	SWSW	CONSOLIDATED CRUDE OIL CO. FLYING J KERR #13-17	2381	7795	8015	220	0	12
1970	150	96	19	NESE	AMERADA PETROL. CORP. L. F. PARRISH #1	2263	7710	7940	230	0	7
10525	150	96	20	NESW	FLYING J EXPLOR. & PROD. CO. LILLIBRIDGE #4	2303	7750	7980	230	0	37
6849	150	96	20	SWNW	CONSOLIDATED CRUDE OIL CO. L. LILLIBRIDGE #3	2327	7755	7980	225	0	33
2452	150	96	20	SWSE	AMERADA PETROL. CORP. L. LILLIBRIDGE #2	2304	7780	8015	235	0	48
1821	150	96	20	SWSW	AMERADA PETROL. CORP. L. LILLIBRIDGE #1	2304	7760	7990	230	0	7
12345	150	96	25	NENW	SUN EXPLOR. & PROD. DELMER RINK #1	2514	7970	8175	205	0	0
1858	150	96	25	NWNE	AMERADA PETROL. CORP. MINNIE KUMMER T 1 #1	2468	7915	8125	210	0	0
1405	150	96	27	NWNE	AMERADA PETROL. CORP. CATHERINE E. PECK #2	2342	7815	8005	190	0	8
7136	150	96	27	NWSE	TENNECO OIL CO. LUCKING #1-27	2329	7795	8025	230	0	25
1740	150	96	29	NENW	AMERADA PETROL. CORP. J. LJAADAL T-1 #1	2243	7725	7945	220	0	0
11794	150	96	29	NESW	TEXACO, INC. EISENLOHR TRUST 1	2283	7800	8020	220	0	35
2110	150	96	29	SWNE	AMERADA PETROL. CORP. BENHOMER RISSER TRACT 1 #1	2223	7728	7950	222	0	8
1914	150	96	29	SWNW	AMERADA PETROL. CORP. S. O. FJELD #1	2233	7727	7950	223	0	8
1849	150	96	29	SWSW	AMERADA PETROL. CORP. POWELL PARRISH #1	2316	7830	8055	225	0	10
2153	150	96	30	NENE	AMERADA PETROL. CORP. L. F. PARRISH #2	2192	7675	7890	215	0	10
7731	150	96	32	SESW	HOME PETROL. CORP. WINALCO #32-1	2448	7985	8204	219	0	48
10782	150	96	34	NESW	SUPERIOR OIL CO. KIRKLAND STATE 34-23	2364	7860	8073	213	0	50
72	150	96	36	SWNE	AMERADA PETROL. CORP. N. DAK. "B" TRACT 1 #1	2388	7895	8085	190	0	0
7743	150	97	3	NWSE	AL-AQUITAINE EXPLOR., LTD. KENNEDY#1-3	2244	7745	7967	222	0	10
11383	150	97	15	NWSE	AMERADA HESS CORP. SIVERTSON 15-33	2167	7748	7947	199	0	0
9024	150	97	20	SWNW	GULF OIL CORP. H. & M. GIERKE #1-20-1D	2123	7975	8185	210	0	6
4050	150	97	26	SESW	AMERADA PETROL. CORP. SKJELVIK UNIT #1	2237	7808	8020	212	0	0
8933	150	97	26	SWSW	CONSOLIDATED CRUDE OIL CO. FLYING J STATE #13-26	2301	7850	8067	217	0	0
1606	150	97	35	NESW	AMERADA PETROL. CORP. H. H. SHELVIC TRACT 1 #1	2334	7918	8133	215	0	4
8343	150	97	35	NWNW	CONSOLIDATED CRUDE OIL CO. SKJELVIK #4-35	2365	7915	8130	215	0	3
10997	150	98	2	NESW	TEXACO, INC. D. A. WOLD "A" 1	2038	7945	8165	220	0	5
8747	150	98	4	SWSW	HILLIARD OIL & GAS, INC. ROLFSON #1	2054	8040	8257	217	0	10
7704	150	98	23	NESE	GULF OIL CORP. SHAFER STATE #1-23-3B	2022	7900	8118	218	0	4
8988	150	98	25	SWSE	VIERSEN & COCHRAN COOPER PETROL. SHAFER #1	2022	7905	8120	215	0	4
8681	150	99	3	S2NW	TEXACO, INC. J. W. FISKETJON #1	2203	8080	8332	252	0	90
8969	150	99	9	NWNE	TEXACO, INC. ANDREW JOHNSRUD "A" NCT-1 #1	2286	8188	8412	224	0	8

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
7873	150	99	15	SESW	TEXACO, INC. FELLAND "A" #1	2141	8040	8274	234	0	8
8401	150	99	22	SENW	TEXACO, INC. JOHN FELLAND #1	2143	8040	8265	225	0	0
8020	150	99	34	SWNE	ALPAR RES., INC. ROGNESS #1-34	2114	8008	8230	222	0	20
8945	150	100	6	NENE	AL-AQUITAINE EXPLOR., LTD. SE ALEX. ALAQ 6-150-100 HOVDE #1-6	2242	8000	8218	218	0	0
7763	150	100	6	NWSW	AL-AQUITAINE EXPLOR., LTD. 6-150-100 SANDERS #1-6	2244	8002	8220	218	0	7
9004	150	100	10	NESE	EXXON CORP. FLECK #1	2329	8178	8380	202	0	0
8372	150	100	26	NWNE	MOBIL OIL CORP. ROGNESS ET AL #1	2331	8190	8403	213	0	0
9777	150	100	27	SESW	MOBIL OIL CORP. H. J. DAHL #1	2332	8165	8387	222	0	0
5774	150	100	29	NWSE	TRUE OIL CO. HEGGEN #33-29	2335	8157	8358	201	0	0
10427	150	100	30	SWNE	TRANSCO EXPLOR. CO. TXPOC-OLSON #1-30	2345	8224	8408	184	0	0
9388	150	100	35	NWNW	MOBIL OIL CORP. ROY MOEN #1	2364	8232	8436	204	0	0
8393	150	101	7	SWSE	TRAVERSE OIL CO. JENNER #1-7	2231	8005	8180	175	0	0
9770	150	101	11	SWSW	PETROL., INC. HEGGEN "B" #1	2225	7988	8192	204	0	0
9029	150	101	13	SWSE	CONSOLIDATED OIL & GAS CO. HEGGEN #1	2272	8062	8283	221	0	0
9479	150	101	13	SWSW	CONSOLIDATED OIL & GAS, INC. HEGGEN #2	2278	8040	8275	235	0	35
9139	150	101	14	NWSE	TOM BROWN, INC. NYGAARD #14-33	2315	8088	8292	204	0	0
8706	150	101	14	NWSW	PETROL., INC. BERGE "C" #1	2308	8030	8233	203	0	0
8466	150	101	15	SWSE	PETROL., INC. ENSOR #1	2302	8060	8265	205	0	0
8473	150	101	17	SWNE	TRAVERSE OIL CO. JACOBSEN #1-17	2196	7937	8145	208	0	0
11150	150	101	19	SESE	TXP OPERATING CO. TXPOC HELLING 1-19	2261	8003	8200	197	0	0
11781	150	101	19	SESW	HPC, INC. SANDERS 24-19	2219	7970	8160	190	0	0
11371	150	101	20	NWSW	HPC, INC. CAHILL-HELLING 12-20	2291	8050	8242	192	0	0
7796	150	101	20	SWSW	TENNECO OIL CO. FREDERICKSON #1-20	2308	8050	8250	200	0	0
8344	150	101	22	NENE	SUNBEHM GAS, INC. JACOBSON #22-1	2296	8050	8262	212	0	0
11270	150	101	22	NENE	SUPERIOR OIL CO. JACOBSEN 22-41	2305	8050	8267	217	0	0
8565	150	101	22	NENW	SUNBEHM GAS, INC. JACOBSON #22-3	2336	8098	8308	210	0	0
8300	150	101	22	NESE	TENNECO OIL CO. SIMPSON #1-22	2298	8050	8268	218	0	7
8435	150	101	23	NWNE	PETROL., INC. BERGE #1	2332	8084	8310	226	0	6
7845	150	101	23	SENW	PETROL., INC.-EXCEL ENERGY NYGAARD STATE #1	2318	8068	8292	224	0	9
9328	150	101	24	NENW	CONSOLIDATED OIL & GAS, INC. BERGE-FLB #1-24	2295	8082	8300	218	0	22
8467	150	101	26	SENW	TRAVERSE OIL CO. JACOBSON #1-26	2325	8100	8315	215	0	10
8399	150	101	29	NENW	TEXAS GAS EXPLOR. CORP. NYGAARD #1-29	2320	8058	8272	214	0	0
8440	150	101	30	SESE	TRAVERSE OIL CO. NYGAARD #1-30	2247	7980	8200	220	0	30
11711	150	101	34	SENW	FOREST OIL CORP. FOC JAMES 1	2279	8045	8262	217	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
11281	150	101	36	SWSW	GRUSS PETROL. MANAGEMENT POGO STATE 1	2446	8252	8453	201	0	0
9102	150	102	2	NWNW	GULF OIL CORP. GAJEWSKI #1-2-1A	2152	7885	8050	165	0	0
8530	150	102	3	SWNE	GETTY OIL CO. ALEXANDER #3-7	2113	7835	8000	165	0	0
7650	150	102	31	NESW	TENNECO OIL CO. FEDERAL #1-31	2262	7985	8155	170	0	0
11550	150	103	3	NESE	PENNZOIL CO. BULL BUTTE 3-43F	2293	8012	8157	145	0	0
7422	150	103	3	NWSW	SHELL OIL CO. SHAIDE #13-3	2127	7843	7980	137	0	0
11771	150	103	18	NESW	ANR PROD. CO. MULE CREEK 1-18	2290	7980	8118	138	0	0
10320	150	103	19	SENE	TOM BROWN, INC. FEDERAL #19-42	2350	8020	8160	140	0	0
7312	150	103	20	NWSE	SHELL OIL CO. USA #33-20	2333	8020	8160	140	0	0
10560	150	103	20	SWSW	TOM BROWN, INC. FEDERAL #20-14	2319	8015	8165	150	0	0
5345	150	103	27	NENE	CHANDLER & ASSOC., INC. U.S. GOV'T. #1-27	2248	7995	8155	160	0	0
10054	150	103	36	SENE	BWAB, INC. STATE #36-42	2206	7920	8083	163	0	0
12216	150	104	1	NWSW	ANR PROD. CO. ISZLEY-USA #1	1988	7630	7774	144	0	0
9995	150	104	3	NWSE	GETTY OIL CO. DORE #3-10X	1908	7548	7687	139	0	0
8546	150	104	5	NWNE	GULF OIL CORP. MARY ARTZ #1-5-2A	1917	7520	7670	150	0	0
11918	150	104	5	NWNW	TENNECO OIL CO. KARST 1-5	1917	7510	7670	160	0	0
12381	150	104	8	NWNW	SUN EXPLOR. & PROD. CO. C. MILLER #1	1910	7500	7648	148	0	0
12262	150	104	9	SESW	SUN EXPLOR. & PROD. CO. B. LANGWALD #1	1900	7476	7617	141	0	0
10154	150	104	10	NWNE	GETTY OIL CO. DORE #10-2	1896	7520	7653	133	0	0
6839	150	104	11	NESE	SHELL OIL CO. USA #43-11	2063	7742	7868	126	0	0
7941	150	104	11	NESW	TENNECO OIL CO. LASSEY #1-11	1980	7615	7760	145	0	0
6775	150	104	12	NENW	SHELL OIL CO. USA #11-12	2116	7790	7930	140	0	0
7971	150	104	14	NENE	SHELL OIL CO. USA #41-14-131	2082	7727	7872	145	0	0
7929	150	104	14	SWSE	SHELL OIL CO. USA #34-14-86	2177	7772	7913	141	0	0
11130	150	104	20	NESE	AMINOIL USA, INC. FLYNN 1-34-20	1905	7450	7590	140	0	0
11305	150	104	23	SENW	DEPCO, INC. FEDERAL 22-23	2093	7685	7838	153	0	0
5655	150	104	25	SWSW	PENNZOIL CO. FEDERAL #25-1	2170	7748	7897	149	0	0
5840	150	104	26	NESE	UNION OIL CO. OF CALIFORNIA FEDERAL #26-1	2103	7680	7831	151	0	0
9034	150	104	29	SENW	LEWIS & CLARK EXPLOR. CO. MELLAND #29-6	1903	7440	7582	142	0	0
5856	150	104	36	NENW	TIGER OIL CO. STATE OF N. D. 1-36	2131	7740	7882	142	0	0
8803	151	80	22	NENE	ATLANTIC RICHFIELD CO. WUNDERLICH #1	1915	0	0	0	0	0
5401	151	81	19	SWSE	CARDINAL & TOM STOCK HAUF #1	2146	0	0	0	0	0
5096	151	86	23	SWSW	GENERAL CRUDE OIL CO. MARLIN W. ROBERTS #1	2150	5960	6112	152	0	0
8177	151	87	18	SESE	MARATHON OIL CO. DOBRINSKI #18-44	2146	6277	6430	153	0	25
5481	151	88	8	NESE	ANADARKO PROD. CO. WELLS "A" #1	2138	6500	6695	195	0	20

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
11086	151	88	14	NWNE	SHELL WESTERN EXPL. & PROD., INC. BLOWERS ET AL 31-14	2112	6313	6520	207	0	10
5353	151	88	18	SENW	CITIES SERVICE OIL CO. CHINBERG A #1	2126	6585	6720	135	0	0
5731	151	88	20	SENW	SOUTHERN UNION PROD. CO. ZIEMAN #1	2147	6570	6685	115	0	0
5529	151	88	21	SESW	CITIES SERVICE OIL CO. WALSH "A" #1	2145	6530	6670	140	0	0
5273	151	88	26	NESW	CITIES SERVICE OIL CO. D. MCGUIRE "A" #1	2167	6480	6624	144	0	0
12199	151	88	28	NESW	UNION TEXAS PETROL. CORP. NESTE CHRISTENSON #28-1	2135	6550	6676	126	0	15
10519	151	89	22	SESE	SOUTHWESTERN ENERGY PROD. CO. BLANCHE SHAFFER #1-22	2106	6680	6835	155	0	0
6780	151	89	24	SENE	BASS ENTERPRISES PROD. CO. ROBERT ANDES #24-1	2133	6610	6770	160	0	0
8213	151	89	27	NWSE	SUN OIL CO. AGNES S. HOFFMAN #1	2138	6710	6862	152	0	0
8447	151	89	34	NWNE	SUN OIL CO. KENNETH THOMPSON #1	2139	6730	6920	190	0	20
4392	151	90	13	NENW	EMPIRE STATE OIL CO. JOHN O. BARTELSON-STATE #1	2115	6840	6985	145	0	0
4386	151	90	28	SESE	EMPIRE STATE OIL CO. VORWERK #1	2216	7100	7300	200	0	10
5257	151	90	34	NWSW	MCCULLOCH OIL CORP. WAHNER #1-34	2223	7130	7330	200	0	40
8559	151	90	36	SWSE	HOME PETROL. CORP. SOLOMONSON-STATE #36-1	2198	7020	7160	140	0	0
3686	151	93	10	NENE	OCCIDENTAL PETROL. CORP. JOHNSON #1	2159	7722	7900	178	0	0
12033	151	93	30	NENE	SUN EXPLOR. & PROD. CO. SUN MARATHON SHOBE 1	2105	7634	7870	236	0	40
7366	151	94	6	NENW	TENNECO OIL CO. OLIVE WELLS #1-6	2175	7480	7720	240	0	7
4594	151	94	10	NWNW	GULFLAND, INC. DRAGS WOLF #1	1956	7370	7600	230	0	6
967	151	94	10	SENE	CALVERT & BRIDGES KENNETH DRAGS WOLF #1	1957	7370	7620	250	0	30
11595	151	94	13	SWSW	EP OPERATING CO. FORT BERTHOLD TRIBES 1-13	2099	7555	7790	235	20	20
3975	151	94	17	SWSW	TOM JORDON FRANK HEART, HEIRS #1	2070	7455	7670	215	0	0
9987	151	94	19	NWNE	WILLIAMS EXPLOR. CO. GOODALL #13-19	2178	7570	7780	210	0	0
2494	151	94	19	SWSE	CARTER OIL CO. THOMAS YELLOWFACE #1	2206	7580	7795	215	0	0
3832	151	94	29	SWSW	TENNECO OIL CO. BULLS EYE #1	2301	7745	7955	210	0	0
1451	151	95	2	NWNW	BRINKERHOFF DRILLING CO. ALFRED ELTON #1	2312	7620	7860	240	0	0
1686	151	95	4	NWSW	TEXACO, INC. L. CHAPIN 1	2317	7520	7754	234	0	0
9184	151	95	5	NESW	TEXACO, INC. F. P. KEOGH #6	2421	7580	7812	232	0	0
1804	151	95	5	SENE	TEXACO, INC. L. CHAPIN 2	2375	7560	7795	235	0	7
8631	151	95	5	SENW	TEXACO, INC. A. N. NELSON NCT-1 #2	2386	7560	7782	222	0	0
11094	151	95	5	SENW	TEXACO, INC. A. N. NELSON (NCT-1) 3	2393	7565	7790	225	0	0
1134	151	95	5	SESW	TEXACO, INC. F. P. KEOGH 2	2432	7589	7817	228	0	0
1167	151	95	6	SESE	TEXACO, INC. L. N. SCOTT 1	2499	7685	7910	225	0	0
1042	151	95	7	SENE	AMERADA PETROL. CORP. W. A. FLEMING T-1 #1	2432	7620	7850	230	0	0
1074	151	95	7	SENW	AMERADA PETROL. CORP. W. K. BERG TRACT 1#1	2394	7670	7890	220	0	10
1161	151	95	7	SESE	TEXACO, INC. MILLARD RICE 1	2437	7650	7867	217	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10149	151	95	8	NESW	TEXACO, INC. BLUE BUTTES MADISON UNIT G-208	2544	7720	7955	235	0	0
882	151	95	8	NWNE	TEXACO, INC. A. HELLE 1	2447	7610	7848	238	0	0
9951	151	95	8	SENW	TEXACO, INC. BLUE BUTTES MADISON UNIT F-208X	2516	7692	7924	232	0	0
1472	151	95	9	NWSW	TEXACO, INC. GOV,T. DOROUGH "D" NCT-1 #7	2341	7558	7797	239	0	0
3834	151	95	9	SESW	TEXACO, INC. GOV'T. DOROUGH "D" (NCT-1) 8	2462	7700	7940	240	0	4
3056	151	95	13	NWNW	HUMBLE OIL & REFINING CO. LEACH-GOV'T. #1	2107	7502	7737	235	0	0
3972	151	95	16	NWNE	TEXACO, INC. NORTH DAKOTA "I" 6	2317	7575	7810	235	0	5
1556	151	95	16	NWNW	AMERADA PETROL. CORP. N. D. "I" #2	2456	7687	7923	236	0	0
3176	151	95	16	NWSE	AMERADA PETROL. CORP. NORTH DAKOTA "I" 5	2459	7705	7945	240	0	4
1363	151	95	16	NWSW	TEXACO, INC. NORTH DAKOTA "I" 1	2468	7698	7937	239	0	0
3112	151	95	16	SENW	TEXACO, INC. NORTH DAKOTA "I" 4	2461	7697	7935	238	0	4
3001	151	95	16	SESW	TEXACO, INC. NORTH DAKOTA "I" 3	2487	7724	7962	238	0	0
2634	151	95	17	NWNW	TEXACO, INC. GOV'T. DOROUGH "E" (NCT-1) #4	2461	7655	7880	225	0	4
1104	151	95	17	NWSE	AMERADA PETROL. CORP. W. E. HAUGEN 1	2502	7705	7935	230	0	0
1543	151	95	17	NWSW	THE TEXAS CO. GOV'T. (016965) #1	2500	7695	7922	227	0	6
1272	151	95	17	SESE	TEXACO, INC. BLUE BUTTES-MAD. U. H 417	2484	7710	7930	220	0	0
1049	151	95	17	SESW	AMERADA PETROL. CORP. RUBY SIVERTSON #1	2424	7630	7855	225	0	0
2188	151	95	18	SENE	TEXACO, INC. R. F. MILLER 1	2436	7635	7868	233	0	5
1659	151	95	18	SESE	AMERADA PETROL. CORP. R. F. MILLER #1	2386	7580	7800	220	0	0
1329	151	95	19	NWSE	TEXACO, INC. MATTIE AURE 2	2422	7700	7860	160	0	0
1425	151	95	19	SENE	AMERADA PETROL. CORP. ELISEBET SIVERTSON "A" #1	2395	7645	7820	175	0	0
9192	151	95	19	SENE	TEXACO, INC. SIVERTSON "A" #2	2436	7635	7855	220	0	0
1106	151	95	19	SESE	AMERADA-SKELLY MATTIE AURE #1	2388	7625	7810	185	0	0
1382	151	95	19	SESW	AMERADA PETROL. CORP. MATTIE AURIE #3	2346	7625	7810	185	0	0
1328	151	95	20	NWNE	AMERADA PETROL. CORP. RUBY SIVERTSON #3	2451	7673	7898	225	0	0
1276	151	95	20	NWNW	AMERADA PETROL. CORP. RUBY SIVERTSON 2	2432	7637	7860	223	0	0
1288	151	95	20	NWSE	AMERADA PETROL. CORP. O. SIVERSON #1	2458	7697	7920	223	0	0
1163	151	95	20	NWSW	AMERADA PETROL. CORP. IVER SELLESETH #1	2442	7653	7873	220	0	0
10870	151	95	20	NWSW	TEXACO, INC. BLUE BUTTES MADISON UNIT G120X	2448	7660	7880	220	0	0
1595	151	95	20	SENE	AMERADA PETROL. CORP. RUBY SIVERTSON #4	2502	7743	7977	234	0	0
1243	151	95	20	SENW	AMERADA PETROL. CORP. ELISEBET SIVERTSON #1	2429	7655	7875	220	0	0
1597	151	95	20	SESE	AMERADA PETROL. CORP. O. SIVERSON #1	2493	7748	7985	237	0	0
1318	151	95	20	SESW	AMERADA PETROL. CORP. IVER SELLESETH TRACT 1 #2	2495	7730	7950	220	0	0
2906	151	95	21	NWNE	TEXACO, INC. GOV'T. DOROUGH "E" (NCT-2) #8	2573	7837	8076	239	0	0
1882	151	95	21	NWNW	TEXACO, INC. GOV'T. DOROUGH "E" (NCT-2) #1	2518	7757	7995	238	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
2969	151	95	21	NWSE	TEXACO, INC. GOV'T. DOROUGH "E" (NCT-2) #9	2608	7877	8110	233	0	3
2163	151	95	21	NWSW	TEXACO, INC. GOV'T. DOROUGH "E" (NCT-2) #2	2542	7800	8035	235	0	7
2575	151	95	21	SENW	TEXACO, INC. GOV'T. DOROUGH "E" (NCT-2) #3	2529	7785	8020	235	0	0
2635	151	95	21	SESW	TEXACO, INC. GOV'T. DOROUGH "E" (NCT-2) #4	2690	7950	8185	235	0	6
3045	151	95	28	NWNE	TEXACO, INC. GOV'T. DOROUGH "E" (NCT-2) #10	2476	7777	8002	225	0	0
2511	151	95	28	NWNW	AMERADA PETROL. CORP. PEDER AURE #3	2560	7820	8055	235	0	3
2585	151	95	28	NWSW	AMERADA PETROL. CORP. PEDER AURE #4	2454	7730	7965	235	0	0
2690	151	95	28	SENW	TEXACO, INC. GOV'T. DOROUGH "E" (NCT-2) #5	2451	7725	7960	235	0	0
2691	151	95	28	SESW	TEXACO, INC. GOV'T. DOROUGH "E" (NCT-2) #6	2416	7715	7944	229	0	0
8005	151	95	29	NESW	TEXACO, INC. SIVERTSON #3	2341	7585	7805	220	0	0
1220	151	95	29	NWNE	AMERADA PETROL. CORP. AURE UNIT #1	2486	7730	7955	225	0	0
1576	151	95	29	NWSE	AMERADA PETROL. CORP. PEDER AURE #1	2389	7650	7870	220	0	0
1604	151	95	29	NWSW	AMERADA PETROL. CORP. SIGURD SIVERTSON #1	2317	7550	7768	218	0	0
1498	151	95	29	SENE	AMERADA PETROL. CORP. GOV'T. UNIT NO. 2 #1	2645	7920	8148	228	0	0
1826	151	95	29	SENW	TEXACO, INC. SIVERTSON (NCT-1) #2	2413	7655	7875	220	0	0
1658	151	95	29	SESE	AMERADA PETROL. CORP. PEDER AURE #2	2384	7660	7880	220	0	0
2290	151	95	29	SESW	TEXACO, INC. S. SEVERTSON 2	2313	7558	7784	226	0	0
11068	151	95	29	SWSE	TEXACO, INC. B. B. M. U. H-329	2398	7617	7837	220	0	0
1338	151	95	30	NWSE	TEXACO, INC. I. SELLESETH 1	2474	7689	7903	214	0	0
12052	151	95	30	NWSE	TEXACO, INC. IVER SELLESETH 3	2444	7660	7890	230	0	0
8339	151	95	30	S2NE	TEXACO, INC. JOHNSON #3	2331	7550	7764	214	0	0
1235	151	95	30	SENE	THE TEXAS CO. P. JOHNSON 2	2324	7545	7764	219	0	0
1589	151	95	30	SENW	TEXACO, INC. O. J. ANDERSON 2	2502	7800	7963	163	0	0
2260	151	95	30	SESW	THE TEXAS CO. O. J. ANDERSON #3	2576	7860	8032	172	0	10
8301	151	95	30	SESW	TEXACO, INC. O. J. ANDERSON #4	2561	7805	8012	207	0	7
923	151	95	30	SWSW	TEXACO, INC. O. J. ANDERSON 1	2555	7870	8040	170	0	0
10742	151	95	31	NESE	TEXACO, INC. BLUE BUTTES MADISON UNIT G431	2470	7710	7930	220	0	0
1647	151	95	31	NWNE	TEXACO, INC. R. REITSCH NCT-2 #1	2509	7722	7950	228	0	0
12362	151	95	31	NWNE	TEXACO, INC. R. E. REITSCH NCT-2 #5	2495	7730	7942	212	0	0
1718	151	95	31	NWSE	TEXACO, INC. L. W. RIGGS 2	2505	7780	7975	195	0	0
9057	151	95	31	NWSE	TEXACO, INC. TEXACO-PHILLIPS ET AL RIGGS #10-31	2506	7750	7974	224	0	0
1823	151	95	31	SENE	TEXACO, INC. R. REITSCH (NCT-2) 2	2426	7670	7890	220	0	0
1572	151	95	31	SESE	PHILLIPS PETROL. CO. RIGGS #1	2419	7653	7881	228	0	0
9763	151	95	31	SESE	TEXACO, INC. B. B. M. U. H431X	2423	7644	7875	231	0	0
1912	151	95	31	SESW	TEXACO, INC. RIGGS ROLFSRUD UNIT 1	2435	7710	7925	215	0	5

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
7571	151	95	31	SWNE	TEXACO, INC. REITSCH NCT-2 #4	2486	7718	7946	228	0	0
7566	151	95	31	SWSE	PHILLIPS PETROL. CO. RIGGS #15-31	2440	7685	7900	215	0	0
10912	151	95	31	SWSE	TEXACO, INC. BLUE BUTTES MADISON UNIT H331	2441	7685	7906	221	0	0
7993	151	95	32	C NE	TEXACO, INC. FREDRICK #5	2300	7553	7785	232	0	0
10174	151	95	32	NENW	TEXACO, INC. BLUE BUTTES MADISON UNIT E232	2319	7570	7790	220	0	0
10150	151	95	32	NESW	TEXACO, INC. BLUE BUTTES MADISON UNIT G-232	2384	7657	7877	220	0	5
2532	151	95	32	NWNE	TEXACO, INC. E. FREDRICK 2	2307	7578	7800	222	0	0
10376	151	95	32	NWNE	TEXACO, INC. BLUE BUTTES MADISON UNIT E332X	2318	7580	7802	222	0	0
1688	151	95	32	NWNW	TEXACO, INC. FREDRICK-SIVERTSON UNIT 1	2340	7587	7806	219	0	0
2448	151	95	32	NWSE	AMERADA PETROL. CORP. LARS ROTHIE #2	2301	7560	7802	242	0	0
1827	151	95	32	NWSW	TEXACO, INC. E. FREDRICK 1	2374	7617	7855	238	0	6
2599	151	95	32	SENE	TEXACO, INC. E. FREDRICK 4	2297	7580	7810	230	0	0
2592	151	95	32	SENW	TEXACO, INC. E. FREDRICK 3	2399	7652	7880	228	0	0
2510	151	95	32	SESE	TEXACO, INC. LARS ROTHIE 3	2310	7587	7825	238	0	5
1831	151	95	32	SESW	TEXACO, INC. LARS ROTHIE 1	2370	7605	7850	245	0	7
10743	151	95	32	SWNW	TEXACO, INC. B. B. M. U. F132	2409	7660	7885	225	0	0
7572	151	95	32	SWSW	TEXACO, INC. LOOMER #1	2416	7663	7892	229	0	0
8269	151	95	32	SWSW	TEXACO, INC. C. M. LOOMER #14	2415	7650	7890	240	0	0
2628	151	95	33	NWNW	AMERADA PETROL. CORP. PEDER AURE #5	2347	7640	7874	234	0	0
2607	151	95	33	NWSW	TEXACO, INC. LARS ROTHIE 4	2272	7570	7813	243	0	5
2885	151	95	33	SENW	TEXACO, INC. GOV'T. DOROUGH "E" (NCT-2) #7	2365	7672	7915	243	0	0
10488	151	96	2	NENE	RANGER OIL CO. ANDERSON #1-2	2409	7720	7900	180	0	3
10226	151	96	2	SWSW	RANGER OIL CO. TANK-EXCHANGE #13-2	2337	7635	7832	197	0	8
2850	151	96	3	NENW	SKELLY OIL CO. OSCAR JONSRUD 1	2365	7559	7793	234	0	0
11540	151	96	3	NESW	RANGER OIL CO. SKAVANGER 11-3	2331	7562	7776	214	0	0
10050	151	96	3	SESW	RANGER OIL CO. SKAVENGER #14-3	2304	7525	7740	215	0	0
10343	151	96	3	SWSE	RANGER OIL CO. RICE #15-3	2313	7575	7782	207	0	0
2882	151	96	4	NENE	SKELLY OIL CO. G. G. SKAVANGER #1	2317	7495	7730	235	0	5
10313	151	96	4	SESE	RANGER OIL CO. TANK #16-4	2304	7505	7740	235	0	5
4776	151	96	5	NENE	CALVERT DRILLING CO. HARLEY OLSON #1	2328	7536	7777	241	0	4
11198	151	96	5	NENW	TEXACO, INC. OSCAR JONSRUD 1	2263	7465	7700	235	0	8
11401	151	96	5	NESW	TEXACO, INC. HARLEY OLSON #1	2227	7450	7687	237	0	0
10584	151	96	8	NENW	ANADARKO PROD. CO. DODGE "A"-1	2258	7482	7727	245	0	30
1746	151	96	8	NWNE	AMERADA PETROL. CORP. H. M. OLSON T-1 #1	2293	7520	7752	232	0	0
10449	151	96	9	NENE	ENERGETICS OPERATING CO. KOSHMAN #41-9	2286	7540	7750	210	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10125	151	96	10	NENW	RANGER OIL CO. TANK #3-10	2306	7535	7767	232	0	0
10118	151	96	10	NWNE	RANGER OIL CO. RICE #2-10	2287	7557	7767	210	0	0
3399	151	96	10	SWSE	CALVERT DRILLING CO. TANK #1	2316	7617	7824	207	0	0
10170	151	96	11	NWNE	RANGER OIL CO. TANK #2-11	2333	7680	7840	160	0	8
5414	151	96	11	SWSW	RAINBOW RES., INC. TANK UPDEGRAFF #1	2350	7678	7870	192	0	0
10227	151	96	15	SENW	ANADARKO PROD. CO. ANDERSON STATE #A-1	2348	7610	7860	250	0	6
306	151	96	15	SESE	AMERADA PETROL. CORP. E. H. PITTSLEY TR-1 #1	2395	7692	7924	232	0	0
7159	151	96	16	SENW	ADOBE OIL & GAS CORP. STATE PITTSLEY #22-16	2366	7632	7870	238	0	6
1908	151	96	17	NWSE	AMERADA PETROL. CORP. W. C. DODGE "A" #1	2322	7568	7803	235	0	0
11391	151	96	17	NWSE	TEXACO, INC. W. C. DODGE TRUST ESTATE 1	2346	7587	7820	233	0	0
2024	151	96	17	SENE	TEXACO, INC. H. OLSON (NCT-1) #1	2301	7562	7780	218	0	0
11204	151	96	17	SENW	TEXACO, INC. TEXACO EXCHANGE OIL & GAS 1	2296	7552	7790	238	0	0
1784	151	96	17	SESE	TEXACO, INC. O. JOHNSRUD #1	2356	7612	7848	236	0	0
11476	151	96	20	NENW	TEXACO, INC. W. C. DODGE TRUST "B" 1	2344	7600	7827	227	0	6
1757	151	96	20	NWNE	AMERADA PETROL. CORP. J. W. WESTEGAARD #1	2315	7575	7800	225	0	0
1721	151	96	20	NWSE	AMERADA PETROL. CORP. W. C. DODGE #1	2350	7635	7870	235	0	10
2046	151	96	20	SENE	TEXACO, INC. J. W. WESTERGAARD "B" #1	2330	7622	7838	216	0	0
2028	151	96	20	SENW	AMERADA PETROL. CORP. A. M. LARSEN #1	2345	7620	7855	235	0	4
2045	151	96	20	SESE	AMERADA PETROL. CORP. W. C. DODGE #2	2325	7647	7870	223	0	7
10165	151	96	22	SENE	ENERGETICS OPERATING CO. WHITE EAGLE #42-22	2437	7725	7965	240	0	4
8124	151	96	22	SENW	ENERGETICS, INC. TANK #22-22	2381	7670	7904	234	0	4
9267	151	96	25	NENE	TEXACO, INC. EVERETT FELDMAN NCT-1 #1	2391	7737	7920	183	0	4
3936	151	96	26	SESW	CALVERT DRILLING CO. JACK SKARDA #1	2440	7778	7993	215	0	0
5505	151	96	26	SWSW	RAINBOW RES., INC. ALFRED BROWN #1-26	2438	7780	7991	211	0	0
3843	151	96	27	NENE	CALVERT DRILLING CO. MUIRHEAD-HELSETH UNIT #1	2385	7705	7918	213	0	8
3680	151	96	27	NESE	CALVERT DRILLING CO. G. C. TANK #1	2371	7700	7907	207	0	0
8873	151	96	27	NWSE	PETRO LEWIS CORP. GEORGE TANK #2	2373	7685	7910	225	0	0
1739	151	96	28	NWNW	TEXACO, INC. E. GRYTE (NCT-1) #1	2319	7630	7860	230	0	5
1619	151	96	29	NWNE	AMERADA PETROL. CORP. ANGUS KENNEDY #1	2317	7575	7795	220	0	10
1722	151	96	29	NWSE	AMERADA PETROL. CORP. W. H. KIESON #1	2310	7630	7852	222	0	8
3279	151	96	29	NWSW	MALLARD PETROL., INC. ANGUS KENNEDY "A" #2	2398	7704	7920	216	0	6
2950	151	96	29	SENW	AMERADA PETROL. CORP. ANGUS KENNEDY #2	2298	7600	7820	220	0	4
1754	151	96	29	SESE	AMERADA PETROL. CORP. W. H. KIESON "A" #1	2283	7608	7830	222	0	6
3217	151	96	29	SESW	MALLARD PETROL., INC. ANGUS KENNEDY "A" #1	2390	7720	7980	260	0	0
2328	151	96	32	NESW	WILLIAM HERBERT HUNT S. JOHNSRUD ET AL #1	2419	7755	7967	212	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
2047	151	96	32	NWNE	AMERADA PETROL. CORP. W. H. KIESON #2	2355	7690	7907	217	0	0
3614	151	96	34	NENE	CALVERT DRILLING CO. ALFRED BROWN #1	2415	7745	7947	202	0	0
1305	151	96	34	NWSE	AMERADA PETROL. CORP. AUSTIN TANK #1	2391	7720	7950	230	0	0
4095	151	96	34	SESE	AMERADA PETROL. CORP. SIGNALNESS-TANK UNIT #1	2432	7790	7984	194	0	5
8997	151	96	35	NESE	RANGER OIL CO. ELLESTAD #9-35	2538	7925	8114	189	0	0
10104	151	96	35	SWSW	RANGER OIL CO. SIGNALNESS #11-35	2451	7800	8005	205	0	0
9945	151	96	36	SWNW	RANGER OIL CO. STATE #5-36	2286	7880	8068	188	0	0
8163	151	96	36	SWSW	KISSINGER PETROL. CORP. STATE #13-36	2457	7875	8030	155	0	10
9363	151	97	7	NENE	AMAREX, INC. BECKEN #1	2284	7940	8165	225	0	0
7008	151	97	11	NWNW	SUPRON ENERGY CORP. ROLFSRUD #1	2291	7730	7955	225	0	0
920	151	97	11	SENE	AMERADA PETROL. CORP. HALVOR ROLFSRUD TR 1 #1	2370	7744	7977	233	0	10
10805	151	97	19	NWNE	TEXACO, INC. G. L. NELSON "A" 1	2157	7894	8115	221	0	0
1765	151	97	35	NWNW	TEXACO, INC. R. KOESER (NCT-1) #1	2430	7895	8120	225	0	4
9263	151	98	20	NESW	PATRICK PETROL. CO. DAVID ROLFSON #1-20	2059	8005	8220	215	0	6
9433	151	98	31	SESE	POGO PRODUCING CO. JOHNSRUD & SONS #1-31	2073	8040	8252	212	0	6
11630	151	98	31	SWSE	DYCO PETROL. CORP. JOHNSRUD 1-31	2074	8046	8260	214	0	5
8131	151	99	10	SWSW	TEXACO, INC. C. L. STENBERG "A" #1	2398	8330	8530	200	0	8
9620	151	99	18	SWNE	EXETER EXPLOR. CO. CLOUSE #7-18	2275	8140	8348	208	0	7
8092	151	99	27	SWNE	TEXACO, INC. R. T. LATTIN #1	2278	8183	8390	207	0	5
11926	151	99	27	SWSW	TEXACO, INC. TEXACO ET AL HENRY TORSTENSON 2	2195	8105	8318	213	0	0
9344	151	99	29	SWSE	GREAT WESTERN DRILLING CO. WALLA #1	2166	8035	8270	235	0	50
7631	151	99	33	NENE	TEXACO, INC. HENRY TORSTENSON #1	2137	7985	8222	237	0	70
8977	151	100	2	SWSE	EXETER EXPLOR. CO. HYSTAD #15-2	2308	8130	8343	213	0	7
9480	151	100	5	SWSW	AL-AQUITAINE EXPLOR., LTD.	2115	7940	8162	222	0	4
					GARRISON AL-AQ 5-151-100 FORTHUN						
11000	151	100	7	NENE	POGO PRODUCING CO. POGO BRATCHER 1-7	2064	7895	8117	222	0	5
10143	151	100	10	NWSE	TEXACO, INC. TEXACO-EXXON ET AL E. G. LEEK #1	2345	8175	8393	218	0	6
9662	151	100	10	SENW	TEXACO, INC. L. M. STENEHJEM #1	2248	8063	8280	217	0	0
11980	151	100	10	SWNE	TEXACO, INC. L. M. STENEHJEM 2	2338	8155	8375	220	0	6
11253	151	100	14	SWNE	EXETER EXPLOR. CO. PHILLIP MOEN 7-14	2346	8180	8395	215	0	0
12164	151	100	17	NWSE	TEXACO, INC. WESTHOMA OIL CO. "A" #1	2185	8005	8218	213	0	5
8439	151	100	19	SESW	TRAVERSE OIL CO. NYGAARD #1-19	2326	7973	8180	207	0	0
8983	151	100	26	NWSW	GREAT WESTERN DRILLING CO. BRUINS #1	2298	8130	8352	222	0	6
9689	151	100	30	NWNW	EDWIN L. COX & BERRY R. COX BERTINUSON 11-30	2225	7980	8190	210	0	0
9300	151	100	30	NWSE	FAYETTE OIL & GAS CORP. BERTINUSON #1	2159	7913	8140	227	0	16

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10280	151	100	31	SESE	NATIONAL OIL CO. C. SOVIG #44-31	2228	7970	8198	228	0	10
9101	151	100	36	SWSW	PIONEER PROD. CORP. STATE #1-36	2260	8140	8355	215	0	12
9169	151	101	1	NESW	TERRA RES., INC. FORTHUM #1-1	2065	7827	8082	255	0	48
11675	151	101	5	SWSE	TOM BROWN, INC. FORTHUN 5-34	2072	7820	8005	185	0	5
11700	151	101	5	SWSW	EXXON CORP. B. A. GREEN #1	2060	7810	7995	185	0	5
10848	151	101	6	NWSE	EXXON CORP. WISER OIL 1	2047	7760	7940	180	0	0
11762	151	101	7	NENE	EXXON CO., USA STATE OF N. D. "E" 1	2042	7775	7955	180	0	4
10701	151	101	8	NENW	SAGE ENERGY CO. GREEN #21-8	2102	7860	8037	177	0	5
10330	151	101	8	NESE	SAGE ENERGY CO. LEE 43-8 #1	2022	7787	7977	190	0	5
11519	151	101	8	NESW	TXP OPERATING CO. TXPOC CLARA AAS 1-8	2086	7830	8028	198	0	0
12282	151	101	8	NWNE	EXXON CO., USA LEE FAMILY #1	2059	7830	NA	NA	0	5
10734	151	101	8	SWNE	TOM BROWN, INC. LEE #8-32	2060	7820	8010	190	0	0
9795	151	101	9	NESE	TOM BROWN, INC. LYLE & EDWARD BRATCHER #9-43	1986	7725	7961	236	0	5
10138	151	101	9	NESW	TEXAS GAS EXPLOR. CORP. BRATCHER #23-9	2001	7752	7957	205	0	5
9994	151	101	9	SWNE	TOM BROWN, INC. BRATCHER #9-32	1983	7760	7960	200	0	5
10139	151	101	9	SWNW	TEXAS GAS EXPLOR. CORP. BRATCHER #12-9	2007	7760	7953	193	0	5
9887	151	101	10	SESE	TOM BROWN, INC. BRATCHER-STATE #10-44	2072	7832	8040	208	0	5
9668	151	101	10	SESW	TOM BROWN, INC. BRATCHER-STATE #10-24	2045	7815	8017	202	0	0
10108	151	101	10	SWNW	TOM BROWN, INC. BRATCHER #10-12	2065	7844	8047	203	0	6
10294	151	101	11	SWSW	GULF OIL CORP. BRATCHER 1-11-4D	2110	7895	8105	210	0	5
9836	151	101	13	SESW	SUNBEHM GAS, INC. HEINZ #13-14	2113	7900	8108	208	0	0
8892	151	101	15	NWNE	SUNBEHM GAS, INC. BRATCHER #15-2	2078	7795	7992	197	0	0
10779	151	101	16	NENW	SAGE ENERGY CO. HELLING STATE 21-16	2057	7830	8030	200	0	5
9259	151	101	18	SWNW	AL-AQUITAINE EXPLOR., LTD. S. SIOUX ALAQ 18-151-101 GAJEWSKI 5-18	2153	7880	8050	170	0	0
10970	151	101	23	NESE	TXP OPERATING CO. TXPOC-HANSEN 1-23	2071	7812	8030	218	0	10
4723	151	101	23	SENE	CONSOLIDATED OIL & GAS CO., INC. FEDERAL LAND BANK ET AL #23	2048	7795	8010	215	0	0
8165	151	101	23	SENE	SUNBEHM GAS, INC. SKEDSVOLD #1	2050	7818	8040	222	0	0
9132	151	101	23	SENW	SUNBEHM GAS, INC. SKEDSVOLD #23-6	2109	7850	8063	213	0	23
9617	151	101	24	NWSW	SUNBEHM GAS, INC. BOLKEN #24-12	2120	7900	8110	210	0	0
4807	151	101	24	SENW	CONSOLIDATED OIL & GAS CO., INC. FEDERAL LAND BANK #24-1	2130	7900	8123	223	0	0
10087	151	101	24	SWNW	SUNBEHM GAS, INC. SKEDSVOLD #24-5	2125	7910	8140	230	0	5
9924	151	101	24	SWSE	SUNBEHM GAS, INC.-MGF OIL CORP. BERTINUSON #24-15	2207	7977	8195	218	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
9844	151	101	25	NWNE	SUNBEHM GAS, INC. SOVIG #25-2	2181	7950	8165	215	0	6
9427	151	101	30	SWNE	EXETER EXPLOR. CO. AASEN #7-30	2308	8080	8240	160	0	0
10287	151	101	36	SWNE	TRANSCO EXPLOR. CO. TXC-STATE #1-36	2169	7902	8135	233	0	65
7142	151	102	1	SENE	AL-AQUITAINE EXPLOR., LTD. GREEN #1-1	2086	7813	7981	168	0	0
11426	151	102	1	SENW	CANTERRA PETROL., INC. SIOUX GREEN 6-1	2140	7863	8042	179	0	5
10285	151	102	2	NENW	SUPERIOR OIL CO. NELSON "B" #2-1	2224	7940	8113	173	0	0
10747	151	102	2	SENE	SUPERIOR OIL CO. MONSON 2-2	2149	7887	8050	163	0	5
9705	151	102	3	SWNW	TOM BROWN, INC. SIMPSON #3-12	2244	7987	8147	160	0	0
9260	151	102	3	SWSW	AL-AQUITAINE EXPLOR., LTD.	2186	7925	8076	151	0	0
					CAMP CREEK ALAQ 3-151-102 SIMPSON #13-3						
10184	151	102	4	NESW	LADD PETROL. CORP. JOHNSON #4-23	2260	7997	8152	155	0	0
9886	151	102	4	SWSE	TOM BROWN, INC. JOHNSON #4-34	2211	7945	8095	150	0	0
10211	151	102	5	NESE	SUPERIOR OIL CO. PAPINEAU #5-1	2284	8018	8172	154	0	0
10159	151	102	5	NWNW	SUN EXPLOR. & PROD. CO. U. S. A. #1	2238	7942	8102	160	0	0
10611	151	102	5	NWSW	SUPERIOR OIL CO. PAPINEAU USA #2	2262	7988	8132	144	0	0
10536	151	102	6	NESW	SUN EXPLOR. & PROD. CO. R. G. HICKS #1	2244	7940	8100	160	0	0
9986	151	102	6	NWNE	SUN EXPLOR. & PROD. CO. A. BROSTUEN #1	2201	7930	8072	142	0	0
10716	151	102	6	NWSE	SUN EXPLOR. & PROD. CO. A. BROSTUEN #2	2284	7960	8102	142	0	0
10711	151	102	7	NENW	SUN EXPLOR. & PROD. CO. L. PAPINEAU #1	2268	7970	8120	150	0	0
10717	151	102	7	NWNE	SUN EXPLOR. & PROD. CO. L. PAPINEAU #2	2297	8020	8160	140	0	0
10524	151	102	8	NENE	TOM BROWN, INC. ROD #8-41	2225	7947	8093	146	0	0
9993	151	102	8	SESW	POGO PRODUCING CO. ROD #1-8	2228	7966	8110	144	0	0
9712	151	102	9	N2NW	HART EXPLOR. & PROD. CO. JOHNSON #1-9	2249	7958	8110	152	0	0
9667	151	102	9	SWNE	TOM BROWN, INC. SIMPSON #9-32	2224	7945	8097	152	0	0
10060	151	102	10	N2SW	TOM BROWN, INC. PESEK STATE #10-23	2137	7880	8032	152	0	0
9774	151	102	10	NWNE	MARTIN OIL CO. WHALSTRON #10-1	2136	7865	8018	153	0	0
10128	151	102	10	NWSE	MARTIN OIL CO. WAHLSTROM #10-2	2109	7838	8000	162	0	0
9906	151	102	10	SWNW	TOM BROWN, INC. PESEK #10-12	2171	7898	8050	152	0	0
10100	151	102	12	SESE	SAGE ENERGY CO. IRWIN-12 #1	2072	7800	7980	180	0	0
8268	151	102	13	NENE	AL-AQUITAINE EXPLOR., LTD. THURLOW #1-13	2105	7850	8018	168	0	0
9698	151	102	13	NWSE	DEPCO, INC. SCOTT #33-13	2111	7845	8006	161	0	0
10526	151	102	13	SESW	POGO PRODUCING CO. POGO/MARTIN/STATE #1-13	2136	7890	8053	163	0	0
9533	151	102	17	NENW	DEPCO, INC. ROD #21-17	2186	7912	8070	158	0	3
9508	151	102	23	SWSE	EXETER EXPLOR. CO. JIM TAYLOR #15-23	2160	7913	8067	154	0	0
11465	151	102	30	SWNW	APACHE CORP. TJELDE 30-5	2047	7772	7925	153	0	4

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
8812	151	102	34	SENW	GULF OIL CORP. MRACHECK #1-34-1C	2179	7947	8100	153	0	0
8322	151	102	34	SWSE	HNG OIL CO. LINK #34-1	2269	7990	8150	160	0	0
9481	151	102	35	NWSW	GULF OIL CORP. LINDECKER #1-35-4A	2256	8016	8185	169	0	0
10714	151	103	1	NESE	SUN EXPLOR. & PROD. CO. LINDSLEY-IVERSON #1	2248	7957	8100	143	0	0
10718	151	103	1	NESW	SUN EXPLOR. & PROD. CO. O'CONNOR-IVERSON "A" UNIT #1	2189	7891	8034	143	0	0
10942	151	103	1	NWNE	SUN EXPLOR. & PROD. CO. IVERSON "C" 1A	2217	7904	8068	164	0	0
10721	151	103	1	NWNW	SUN EXPLOR. & PROD. CO. O'CONNOR-IVERSON UNIT #1	2178	7870	8020	150	0	0
10295	151	103	2	NENE	DEPCO, INC. O'CONNER #41-2	2178	7860	8020	160	0	0
10661	151	103	2	NENW	DEPCO, INC. O'CONNOR #21-2	2233	7910	8065	155	0	0
10715	151	103	2	NESE	GULF OIL CORP. O'CONNOR #1-2-3B	2224	7906	8065	159	0	0
10872	151	103	3	NENE	DEPCO, INC. JOHNSON 41-3	2246	7922	8028	106	0	0
10878	151	103	3	NENW	SUN EXPLOR. & PROD. CO. MYERS-JOHNSON UNIT 1	2222	7885	8046	161	0	0
11241	151	103	3	NESE	SUN EXPLOR. & PROD. CO. M. L. LASSEY "B" 1	2224	7915	8054	139	0	0
11750	151	103	4	SESE	TXP OPERATING CO. TXPOC SKORPIL 1-4	2199	7885	8030	145	0	0
12288	151	103	4	SESW	TXP OPERATING CO. TXPOC SKORPIL #24-4	2189	7850	8006	156	0	0
1624	151	103	8	SWNE	INVESTORS OIL, INC. EDNA MAY SHAIDE #1	2200	7858	8010	152	0	0
12036	151	103	9	NENE	TXP OPERATING CO. TXPOC LASSEY 1-9	2216	7878	8040	162	0	0
12089	151	103	10	NENW	TXP OPERATING CO. TXPOC LASSEY 1-10	2218	7882	8043	161	0	0
10380	151	103	11	NENW	DEPCO, INC. FLB-SKORPIL #21-11	2182	7858	8015	157	0	0
10720	151	103	12	NENE	SUN EXPLOR. & PROD. CO. O'CONNOR-TAYLOR #1	2261	7944	8100	156	0	0
10186	151	103	15	SWNW	HNG OIL CO. LASSEY 15 #1	2117	7778	7932	154	0	0
9370	151	103	19	NENE	AL-AQUITAINE EXPLOR., LTD. ANDERSON ET AL #1-19	2145	7795	7945	150	0	0
9640	151	103	19	SWSW	LADD PETROL. CORP. LADD HART PAULSON #19-14	2044	7700	7850	150	0	0
9377	151	103	21	NENE	EXETER EXPLOR. CO. SKOGEN-FEDERAL #1-21	2163	7870	8018	148	0	0
9513	151	103	30	SWNE	AL-AQUITAINE EXPLOR., LTD. BUFORD, ALAQ 30-151-103 VERPLANCKE -30	2163	7836	7983	147	0	0
9464	151	104	1	NENW	AMOCO PROD. CO. CROY AMOCO "A" #1	2123	7730	7887	157	0	0
9860	151	104	21	SENW	AMINOIL USA, INC. KETTERLING #1-21	1911	7478	7628	150	0	0
8985	151	104	24	NESE	LADD PETROL. CORP. LADD DUNCAN PAULSON #24-43	2105	7779	7900	121	0	0
9702	151	104	24	NESW	TENNECO OIL CO. KOCH #1-24	2157	7800	7954	154	0	0
10463	151	104	24	SWNE	LADD PETROL. CORP. THORSON #24-32	2152	7810	7950	140	0	0
9623	151	104	25	NESE	HART EXPLOR. & PROD. CO. TRANSCO THORSON #1-25	1958	7640	7767	127	0	0
9736	151	104	25	SENW	HART EXPLOR. & PROD. CO. HART-TRANSCO SHAIDE #25-1	2116	7770	7922	152	0	0
11713	151	104	32	SWSW	TENNECO OIL CO. DANIELSON 1-32	1911	7510	7669	159	0	0
8801	152	80	15	NWNW	MITCHELL ENERGY CORP. KITTELSON #1-15	1678	0	0	0	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
588	152	82	33	SWSE	WILLIAM HERBERT HUNT F. C. NEUMANN #1	2087	0	0	0	0	0
3080	152	83	13	SESE	CARDINAL PETROL. CO. & NATIONAL BULK CARRIERS ED MATHIS #1	2110	0	0	0	0	0
7554	152	85	7	SWNW	MARATHON OIL CO. HAUGEN #7-12	2122	5615	5700	85	0	0
5578	152	86	1	NWSW	COCKRELL CORP. MOCK ET AL #1	2121	5645	5755	110	0	10
5080	152	86	2	NWSW	GENERAL CRUDE OIL CO. STANLEY MOSER #1	2141	5710	5815	105	0	0
5219	152	86	3	SWNE	GENERAL CRUDE OIL CO. BEN ECKERT #1	2133	5700	5800	100	0	0
11606	152	86	6	NWSE	CENEX KOSTENKE 10-6	2078	5790	5935	145	0	0
9036	152	86	10	NWNW	MERIT ENERGY CORP. BEN ECKERT ET UX #1	2110	5720	5850	130	0	0
5105	152	86	28	NWNW	GENERAL CRUDE OIL CO. JEROME JENSEN #1	2120	5850	5975	125	0	0
8009	152	87	3	SWSE	UNION OIL CO. OF CALIFORNIA ZAVALNEY #1-03	2108	5970	6100	130	0	0
9429	152	87	19	SWNW	NORTEX GAS & OIL CO. LARSON #1-19	2086	6145	6280	135	0	0
5313	152	87	28	SWNW	CITIES SERVICE OIL CO. JOHN L. RENSCH "A" #1	2092	6095	6247	152	0	6
12264	152	87	29	SENW	UNION TEXAS PETROL. CORP. NESTE STAFSLIEN #29-1	2103	6132	6282	150	0	20
12337	152	88	2	NESE	HPC, INC. LYNNE #43-2	2103	6150	6298	148	0	40
12354	152	88	2	NESW	HPC, INC. FJELDAHL #23-2	2095	6180	6302	122	0	0
12338	152	88	2	NWNW	HPC, INC. ERICKSON FEE #11-2	2107	6187	6322	135	0	0
12265	152	88	2	SENW	HPC, INC. ERICKSON FEE #22-2	2098	6170	6327	157	0	0
12391	152	88	2	SWNE	HPC, INC. LYNNE #32-2	2100	6165	6327	162	0	12
12233	152	88	2	SWSE	HPC, INC. LYNNE #34-2	2105	6162	6320	158	0	64
12411	152	88	2	SWSW	HPC, INC. FJELDAHL #14-2	1098	6203	6338	135	0	0
12419	152	88	3	SENE	HPC, INC. TVEDT #42-3	2108	6190	6298	108	0	0
12133	152	88	11	NWNE	HOME PETROL. CORP. ROVIG-NESS-STATE #31-11	2110	6180	6313	133	0	30
12355	152	88	11	NWNW	HPC, INC. WURTZ #11-11	2097	6185	6333	148	0	30
11410	152	88	11	SENE	HPC, INC. ROVIG-NESS-STATE 42-11	2098	6185	6320	135	0	10
9556	152	88	12	SWSE	POGO PRODUCING CO. MALM #1-12	2087	6160	6293	133	0	7
9557	152	88	12	SWSW	POGO PRODUCING CO. JOHNSON #2-12	2079	6160	6296	136	0	0
12236	152	88	13	NWSW	HPC, INC. KOK #13-13	2105	6190	6327	137	0	0
9098	152	88	13	SWNW	NORTEX GAS & OIL CO. KOK #1-13	2094	6175	6340	165	0	0
9548	152	88	14	SENE	NORTEX GAS & OIL CO. LYNNE #1-14	2095	6190	6310	120	0	0
2779	152	88	19	SWNW	NORMAN EDMUND W. A. SPLETSTOSER #1	2086	6418	6535	117	0	0
9498	152	88	23	NESE	NORTEX GAS & OIL CO. THUERINGER #1-23	2095	6213	6340	127	0	0
10994	152	88	24	NWSE	HOME PETROL. CORP. STAFSLIEN 1-24	2098	6170	6320	150	0	0
9219	152	88	28	NESW	ANADARKO PROD. CO. E. J. PETERSON #1	2113	6375	6500	125	0	0
9142	152	88	33	NWNW	ANADARKO PROD. CO. FLAHAVEN "A" #1	2112	6400	6550	150	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
8071	152	90	3	NENW	LEAR PETROL. EXPLOR., INC. PARSHALL S. D. #1	1967	6633	6800	167	0	0
4747	152	90	30	NWNW	MIAMI OIL PROD., INC. AGNES STOLPMAN #1	1881	6750	6910	160	0	13
9055	152	90	35	NWSE	MITCHELL ENERGY CORP. ELBERG #1-35	2001	6720	6847	127	0	6
4061	152	93	16	NWNW	SOCONY MOBILE OIL CO., INC. GRADY HEIRS #F11-161	2020	7483	7710	227	0	65
11681	152	93	23	SENW	EP OPERATING CO. SANISH 1-23	2127	7585	7792	207	0	8
1748	152	94	6	NWNE	AMERADA PETROL. CORP. REED-NORBY UNIT #1	2198	7665	7880	215	0	0
1265	152	94	6	NWNW	AMERADA PETROL. CORP. JENS STRAND 2	2220	7484	7700	216	0	0
1432	152	94	6	NWSE	AMERADA PETROL. CORP. R. A. HENDRICKSON #1	2130	7422	7620	198	0	0
1262	152	94	6	NWSW	AMERADA PETROL. CORP. T. L. LACEY 1	2121	7260	7452	192	0	0
1326	152	94	6	SESW	AMERADA PETROL. CORP. MILDRED BANCROFT 1	2122	7260	7480	220	0	0
1202	152	94	6	SWNW	AMERADA PETROL. CORP. JENS STRAND 1	2129	7365	7554	189	0	0
2306	152	94	6	SWSE	AMERADA PETROL. CORP. RAE HENDRICKSON 1	2113	7350	7580	230	0	0
1279	152	94	7	NESW	STANOLIND OIL & GAS CO. HELEN G. PRICE #1	2186	7300	7527	227	0	0
1417	152	94	7	NWNE	AMERADA PETROL. CORP. NORBY-MELBY 2	2155	7328	7555	227	0	0
1369	152	94	7	NWNW	AMERADA PETROL. CORP. LACEY MELBY #1	2194	7277	7503	226	0	0
3387	152	94	7	NWNW	AMERADA PETROL. CORP. ANTELOPE UNIT F #1	2190	7260	7490	230	0	4
4240	152	94	7	NWNW	AMERADA PETROL. CORP. ANTELOPE DEVONIAN U. #4	2197	7282	7511	229	0	0
1342	152	94	7	NWSE	AMERADA PETROL. CORP. HELEN GOUGH PRICE #2	2148	7276	7507	231	0	0
1343	152	94	7	NWSW	AMERADA PETROL. CORP. HELEN G. PRICE #3	2200	7303	7531	228	0	0
1370	152	94	7	SENW	AMERADA PETROL. CORP. BANCROFT-MELBY UNIT 1	2172	7268	7493	225	0	0
1389	152	94	7	SESE	AMERADA PETROL. CORP. PRICE-LEWIS UNIT 1	2099	7260	7480	220	0	3
1416	152	94	7	SWNE	AMERADA PETROL. CORP. NORBY MELBY #1	2167	7318	7543	225	0	0
4262	152	94	7	SWNE	AMERADA PETROL. CORP. ANTELOPE DEV. U. #7I	2155	7283	7512	229	0	0
8908	152	94	8	SENE	W. C. KIRKWOOD MELBY #42-8	2060	7610	7820	210	0	0
1917	152	94	8	SWNW	AMERADA PETROL. CORP. MELBY UNIT 1	2176	7478	7704	226	0	4
2057	152	94	16	SWNW	PAN AMERICAN PETROL. CORP. HARVEY HOPKINS "B" #1	2186	7600	7832	232	0	0
2179	152	94	16	SWSE	PAN AMERICAN PETROL. CORP. ROSE HOPKINS HAND #2	2125	7620	7847	227	0	0
1890	152	94	16	SWSW	CLINTON OIL CO. ROSE HOPKINS HAND #1	2166	7500	7732	232	0	0
11686	152	94	17	NESE	GENERAL ATLANTIC ENERGY CORP. PRONGHORN 1	2183	7510	7732	222	0	0
1779	152	94	17	NWNE	PAN AMERICAN PETROL. CORP. HARVEY HOPKINS #3	2196	7530	7747	217	0	0
1499	152	94	17	NWNW	PAN AMERICAN PETROL. CORP. HARVEY HOPKINS #2	2120	7320	7560	240	0	0
1339	152	94	17	NWSE	NORTHERN PUMP CO. G. T. ROHDE #2	2197	7505	7709	204	0	0
1398	152	94	17	SENW	PAN AMERICAN PETROL. CORP. HARVEY HOPKINS #1	2174	7415	7643	228	0	0
1254	152	94	17	SWSE	AMERADA PETROL. CORP. GILBERT T. ROHDE 1	2168	7455	7655	200	0	0
1440	152	94	18	NWNE	PAN AMERICAN PETROL. CORP. GEORGE C. LEWIS #2	2131	7265	7510	245	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
2087	152	94	18	NWSE	PAN AMERICAN PETROL. CORP. LEWIS #4	2183	7340	7590	250	0	5
1780	152	94	18	SENE	PAN AMERICAN PETROL. CORP. GEORGE C. LEWIS #3	2171	7370	7580	210	0	0
2236	152	94	18	SESW	PAN AMERICAN PETROL. CORP. MARTIN FOX #1	2196	7367	7607	240	0	6
1164	152	94	21	SWNW	NORTHERN PUMP CO. ELLA MANY RIBS #1	2173	7455	7700	245	0	0
341	152	94	21	SWSE	PAN AMERICAN PETROL. CORP. WOODROW STARR #1	2145	7480	7693	213	0	0
1987	152	94	21	SWSE	PAN AMERICAN PETROL. CORP. WOODROW STARR #1A	2136	7468	7682	214	0	0
1306	152	94	21	SWSW	NORTHERN PUMP CO. ELLA MANY RIBS "A" #1	2160	7490	7705	215	0	0
762	152	94	22	SWSW	PAN AMERICAN PETROL. CORP. DORA HOPKINS	2167	7600	7810	210	0	0
2308	152	94	27	SWNW	GULF OIL CORP. DRAGS WOLF HEIRS #1	2187	7590	7810	220	0	6
4168	152	94	27	SWSW	PEL-TEX, INC. DRAGSWOLF ALLOTTED #1	2200	7590	7807	217	0	6
8446	152	94	28	NENE	TRANSCONTINENTAL OIL CORP. ALLISON DRAGS WOLF HALL #41-28	2206	7583	7790	207	0	0
845	152	94	28	SWNE	STANOLIND OIL & GAS CO. LOUIS DRAGSWOLF #1	2168	7515	7720	205	0	0
566	152	94	28	SWNW	PAN AMERICAN PETROL. CORP. NEW YEAR MANY RIBS #1	2200	7512	7755	243	0	0
12019	152	94	33	SENE	RAYMOND T. DUNCAN ROSE 1	2155	7564	7767	203	0	0
12198	152	94	34	SWNW	RAYMOND T. DUNCAN FOX #1	2138	7545	7760	215	0	0
1350	152	95	1	NENE	AMERADA PETROL. CORP. BRENNA-LACEY UNIT 1	2257	7415	7635	220	0	7
1372	152	95	1	NENW	AMERADA PETROL. CORP. ELDRED BRENNA T2 #3	2260	7375	7600	225	0	0
1250	152	95	1	NESE	AMERADA PETROL. CORP. ELLEN LACEY 1	2130	7245	7440	195	0	0
12152	152	95	1	NESW	AMERADA HESS CORP. ANTELOPE MADISON UNIT #F518I	2168	7297	7507	210	0	0
3086	152	95	1	NWNW	AMERADA PETROL. CORP. ANTELOPE UNIT "B" #1	2210	7327	7543	216	0	0
4222	152	95	1	NWSE	AMERADA PETROL. CORP. ANTELOPE-DEVONIAN U. #2	2138	7260	7455	195	0	0
1255	152	95	1	NWSW	AMERADA PETROL. CORP. ELDRED BRENNA T1 #1	2198	7345	7563	218	0	0
1111	152	95	1	SENE	AMERADA PETROL. CORP. LACEY-NORBY 1	2148	7262	7452	190	0	0
1323	152	95	1	SENW	AMERADA PETROL. CORP. LACEY NORBY #2	2177	7298	7513	215	0	0
4218	152	95	1	SENW	AMERADA PETROL. CORP. ANTELOPE-DEVONIAN U. #1	2180	7283	7510	227	0	0
1144	152	95	1	SESW	AMERADA PETROL. CORP. TOM LARSON T 1 #1	2136	7283	7492	209	0	0
1352	152	95	1	SWNW	AMERADA PETROL. CORP. BRENNA NORBY U. #1	2173	7295	7514	219	0	10
3246	152	95	2	NENE	AMERADA PETROL. CORP. ANTELOPE UNIT "C" 1	2221	7380	7565	185	0	0
2480	152	95	2	NWNE	AMERADA PETROL. CORP. F. E. WEEDEMAN T2 #1	2276	7440	7655	215	0	20
1571	152	95	2	SENE	AMERADA PETROL. CORP. ELDRED BRENNA T1 #3	2201	7363	7572	209	0	0
3841	152	95	2	SENW	AMERADA PETROL. CORP. ANTELOPE-MAD. U. B-519I	2296	7468	7692	224	0	0
1711	152	95	2	SESE	AMERADA PETROL. CORP. TOM LARSON TR. 1 #2	2168	7315	7557	242	0	0
2035	152	95	2	SWNE	AMERADA PETROL. CORP. ELDRED BRENNA T1 #4	2234	7445	7613	168	0	0
8100	152	95	3	SENE	ENERGETICS, INC. HAGEN #42-3	2308	7458	7690	232	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
1638	152	95	4	NWSW	AMERADA PETROL. CORP. T. B. FROSHAUG #1	2407	7510	7778	268	0	5
1474	152	95	5	SESE	AMERADA PETROL. CORP. EDWIN GRIMESTAD #1	2385	7495	7750	255	0	0
1862	152	95	5	SESW	AMERADA PETROL. CORP. HAWKEYE-MAD U. G 619	2372	7438	7708	270	0	6
1114	152	95	5	SWNW	AMERADA PETROL. CORP. L. GILBERTSON #1	2324	7318	7580	262	0	0
1203	152	95	6	NENE	AMERADA PETROL. CORP. LAWRENCE E. GRIMESTAD #1	2319	7285	7557	272	0	10
8090	152	95	6	NESE	AMERADA HESS CORP. GRIMESTAD #4-6	2331	7330	7600	270	0	5
1162	152	95	6	NWSE	AMERADA PETROL. CORP. HAWKEYE-MAD U. D 620	2318	7293	7570	277	0	0
1088	152	95	6	SENE	AMERADA PETROL. CORP. ALBERT ANDERSON #1	2319	7300	7570	270	0	5
2030	152	95	6	SESE	AMERADA PETROL. CORP. JAMES GRIMESTAD #3	2326	7330	7602	272	0	5
1601	152	95	7	NWNE	AMERADA PETROL. CORP. HAWKEYE-MAD U. D 618	2322	7326	7600	274	0	13
1421	152	95	7	NWSE	AMERADA PETROL. CORP. HAWKEYE-MAD U. D 616	2342	7391	7665	274	0	0
4013	152	95	7	NWSW	AMERADA PETROL. CORP. HAWKEYE-MAD U. #B-616	2363	7435	7694	259	0	8
1360	152	95	7	SENE	AMERADA PETROL. CORP. HAWKEYE-MAD U. E 617	2333	7360	7630	270	0	10
1504	152	95	7	SENW	AMERADA PETROL. CORP. HAWKEYE-MAD U. C 617	2335	7385	7655	270	0	0
1218	152	95	7	SESE	AMERADA PETROL. CORP. HAWKEYE-MAD U. E 615	2353	7410	7680	270	0	10
1557	152	95	8	NWNE	AMERADA PETROL. CORP. ARTHUR MOGEN #3	2362	7457	7730	273	0	10
1596	152	95	8	NWNW	AMERADA PETROL. CORP. HAWKEYE-MAD U. F 618	2346	7390	7668	278	0	8
1558	152	95	8	NWSE	AMERADA PETROL. CORP. HAWKEYE-MAD U. H 616	2353	7442	7710	268	0	10
1312	152	95	8	NWSW	AMERADA PETROL. CORP. K. KRAMER (TRACT 1) #1	2326	7373	7640	267	0	15
1419	152	95	8	SENE	AMERADA PETROL. CORP. HAWKEYE-MAD U. I 617	2351	7460	7730	270	0	6
1555	152	95	8	SENW	AMERADA PETROL. CORP. K. KRAMER TR 1 #2	2333	7398	7668	270	0	10
1310	152	95	8	SESE	AMERADA PETROL. CORP. HAWKEYE-MAD U. I 615	2365	7480	7748	268	0	5
1568	152	95	8	SESW	AMERADA PETROL. CORP. HAWKEYE-MAD U. G 615	2346	7434	7688	254	0	12
1362	152	95	9	NWSW	AMERADA PETROL. CORP. HAWKEYE-MAD U. J 616	2327	7462	7740	278	0	65
1671	152	95	9	SESW	TEXACO, INC. R. MOE #1	2389	7562	7807	245	0	0
1846	152	95	11	SENE	AMERADA PETROL. CORP. SWENSON HEIRS 1	2242	7400	7650	250	0	0
1351	152	95	12	NENE	AMERADA PETROL. CORP. LACEY UNIT #1	2175	7254	7484	230	0	0
1381	152	95	12	NWNW	AMERADA PETROL. CORP. A. B. FLEMING ESTATE 1	2210	7352	7600	248	0	0
1345	152	95	12	NWSE	AMERADA PETROL. CORP. HELEN GOUGH PRILE #2	2262	7408	7650	242	0	0
1567	152	95	12	SENE	AMERADA PETROL. CORP. T. L. LACEY "A" 1	2196	7295	7521	226	0	0
2034	152	95	12	SENW	AMERADA PETROL. CORP. A. B. FLEMING ESTATE 2	2249	7390	7625	235	0	0
1344	152	95	12	SESE	PAN AMERICAN PETROL. CORP. HELEN GOUGH PRICE #4	2239	7373	7612	239	0	0
1277	152	95	16	NWNW	AMERADA PETROL. CORP. CLAYTON SORENSON #1	2382	7539	7781	242	0	0
1422	152	95	16	NWSW	AMERADA PETROL. CORP. HAWKEYE-MAD U. J 612	2383	7540	7782	242	0	5
1488	152	95	17	NWNE	AMERADA PETROL. CORP. HAWKEYE-MAD U. H 614	2357	7451	7697	246	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
1284	152	95	17	NWNW	AMERADA PETROL. CORP. HAWKEYE-MAD U. F 614	2348	7429	7690	261	0	0
1200	152	95	17	NWSE	AMERADA PETROL. CORP. HAWKEYE-MAD U. G 612	2351	7478	7742	264	0	35
1320	152	95	17	NWSW	AMERADA PETROL. CORP. HAWKEYE-MAD U. F 612	2388	7473	7730	257	0	8
12214	152	95	17	NWSW	AMERADA HESS CORP. A. O. THOMPSON #17-13	2368	7482	7740	258	0	5
1241	152	95	17	SENE	AMERADA PETROL. CORP. HAWKEYE-MAD U. I 613	2370	7510	7765	255	0	0
1361	152	95	17	SENW	AMERADA PETROL. CORP. HAWKEYE-MAD U. G 613	2353	7450	7720	270	0	5
1331	152	95	17	SESE	AMERADA PETROL. CORP. MAXWELL OVE #2	2376	7535	7792	257	0	0
1181	152	95	17	SESW	AMERADA PETROL. CORP. HAWKEYE-MAD U. G 611	2369	7464	7732	268	0	20
1562	152	95	18	NWNE	AMERADA PETROL. CORP. SIMON SWENSON TRACT 3 #2	2371	7455	7727	272	0	6
1295	152	95	18	SENE	AMERADA PETROL. CORP. HAWKEYE-MAD U. E 613	2362	7447	7720	273	0	7
1256	152	95	18	SESE	AMERADA PETROL. CORP. HAWKEYE-MAD U. E 611	2399	7487	7758	271	0	0
1423	152	95	18	SESW	AMERADA PETROL. CORP. HAWKEYE-MAD U. C 611	2401	7502	7755	253	0	0
1327	152	95	19	NWNE	AMERADA PETROL. CORP. HAWKEYE-MAD U. D 610	2427	7528	7790	262	0	4
1603	152	95	19	NWSE	AMERADA PETROL. CORP. S. GRIMESTAD TR 1 #2	2425	7540	7786	246	0	0
1156	152	95	19	SENE	AMERADA PETROL. CORP. HAWKEYE-MAD U. E 609	2396	7484	7743	259	0	0
948	152	95	19	SESE	AMERADA PETROL. CORP. HAWKEYE-MAD U. E 607	2441	7558	7790	232	0	0
1242	152	95	20	NWNE	THE TEXAS CO. O. LARSON #1	2383	7525	7767	242	0	6
1289	152	95	20	NWNW	AMERADA PETROL. CORP. HAWKEYE-MAD U. F 610	2388	7478	7753	275	0	30
1285	152	95	20	NWSE	AMERADA PETROL. CORP. VERNIE CHAPIN #4	2406	7532	7775	243	0	4
1065	152	95	20	NWSW	AMERADA PETROL. CORP. HAWKEYE-MAD U. F 608	2409	7530	7770	240	0	3
1433	152	95	20	SENE	THE TEXAS CO. O. LARSON #2	2408	7560	7800	240	0	3
1143	152	95	20	SENW	AMERADA PETROL. CORP. SIMON SWENSON TRACT 1 #1	2397	7510	7753	243	0	3
11110	152	95	20	SENW	AMERADA HESS CORP. SWENSON 20-22	2402	7512	7757	245	0	3
1657	152	95	20	SESE	AMERADA PETROL. CORP. HAWKEYE-MAD U. I 607	2454	7600	7848	248	0	0
1316	152	95	20	SESW	AMERADA PETROL. CORP. VERNIE CHADIN #5	2453	7568	7802	234	0	6
1193	152	95	29	NWNW	AMERADA PETROL. CORP. VERNIE CHAPIN #2	2466	7580	7800	220	0	0
1317	152	95	29	NWSW	AMERADA PETROL. CORP. VERNIE CHAPIN #1	2522	7635	7870	235	0	6
1330	152	95	29	SESE	AMERADA PETROL. CORP. VERNIE CHAPIN #7	2395	7560	7797	237	0	3
1246	152	95	29	SESW	AMERADA PETROL. CORP. HAWKEYE-MAD U. G 603	2446	7575	7810	235	0	0
1066	152	95	30	NWNE	AMERADA PETROL. CORP. SAM GRIMESTAD "A" #1	2451	7588	7823	235	0	5
9539	152	95	32	NESW	TEXACO, INC. L. L. CHAPIN #1	2436	7577	7810	233	0	5
2417	152	95	32	NWSW	TEXACO, INC. AMERADA KEOAH CHAPIN U. #1	2400	7540	7785	245	0	6
2661	152	95	32	SENW	AMERADA PETROL. CORP. HAWKEYE-MAD U. G 601	2525	7664	7896	232	0	7
320	152	96	2	SESW	AMERADA PETROL. CORP. MORTEN ANDERSON #1	2362	7260	7535	275	0	6
4089	152	96	3	NENE	TEXACO, INC. C. O. FELLAND #1	2330	7160	7435	275	0	5

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10636	152	96	3	NESE	LADD PETROL. CORP. WISNESS #1	2343	7212	7475	263	0	8
1750	152	96	3	NWSW	TEXACO, INC. L. WISNESS #1	2351	7270	7532	262	0	5
2169	152	96	3	SENW	TEXACO, INC. L. WISNESS #2	2320	7180	7446	266	0	5
1559	152	96	3	SESW	TEXACO, INC. A. WISNESS #1	2341	7205	7468	263	0	0
3118	152	96	3	SWNE	TEXACO, INC. A. S. WISNESS-FELAND U. #1	2309	7155	7423	268	0	20
1751	152	96	10	NWNE	TEXACO, INC. OLAF LARSEN #1	2353	7225	7488	263	0	20
2624	152	96	10	NWSE	TEXACO, INC. E. C. BRENNA #1	2415	7325	7597	272	0	7
2123	152	96	10	SENW	TEXACO, INC. H. BRENNA #1	2400	7287	7550	263	0	5
8764	152	96	11	SESE	KISSINGER PETROL. CORP. AMOCO-MARTINSON #16-11	2422	7490	7682	192	0	15
875	152	96	11	SESW	AMERADA PETROL. CORP. E. C. BRENNA ET AL #1	2415	7425	7630	205	0	0
4044	152	96	12	SENE	AMERADA PETROL. CORP. HAWKEYE-MAD U. A 617	2364	7427	7666	239	0	0
5825	152	96	12	SESE	ENERGETICS, INC. INGA GILBERTSON #44-12	2379	7440	7700	260	0	4
7821	152	96	12	SESW	ENERGETICS, INC. BRENNA ET AL #24-12	2426	7500	7700	200	0	0
6737	152	96	13	NWNE	ENERGETICS, INC. MATHEISON #31-13	2414	7482	7746	264	0	6
8266	152	96	13	NWNW	ENERGETICS, INC. SORENSON #11-13	2441	7522	7728	206	0	0
6168	152	96	13	NWSW	ENERGETICS, INC. ELDRED BRENNA #13-13	2479	7572	7783	211	0	0
6529	152	96	13	SENW	ENERGETICS, INC. SORENSON #22-13	2460	7550	7786	236	0	0
4102	152	96	13	SWSE	SKELLY OIL CO. S. T. SWENSON #1	2431	7540	7804	264	0	0
5537	152	96	13	SWSW	ASHLAND OIL, INC. BRENNA #1-13	2456	7567	7790	223	0	0
6342	152	96	14	SENE	KISSINGER PETROL. CORP. BRENNA #8-14	2431	7512	7700	188	0	0
7335	152	96	14	SENE	ENERGETICS, INC. OWEN BRENNA #42-14	2432	7520	7710	190	0	10
7774	152	96	14	SENW	ENERGETICS, INC. OWEN BRENNA #22-14	2444	7500	7698	198	0	8
6323	152	96	14	SESE	ENERGETICS, INC. GEORGE WOLLAN #44-14	2451	7557	7747	190	0	0
8315	152	96	14	SESW	ENERGETICS, INC. WOLLAN #24-14	2461	7533	7722	189	0	0
147	152	96	15	NWNW	AMERADA PETROL. CORP. GEORGE WOLLAN #1	2480	7395	7685	290	0	20
8402	152	96	15	NWSE	KISSINGER PETROL. CORP. WOLLAN #10-15	2465	7420	7698	278	0	5
8560	152	96	15	SENE	KISSINGER PETROL. CORP. WOLLAN #8-15	2477	7425	7700	275	0	5
7894	152	96	15	SENW	KISSINGER PETROL. CORP. WOLLAN #6-15	2500	7445	7722	277	0	0
8528	152	96	15	SESW	KISSINGER PETROL. CORP. WOLLAN #14-15	2435	7410	7683	273	0	0
8935	152	96	17	NESW	RANGER OIL CO. ROLFSRUD #11-17	2510	7520	7790	270	0	4
1267	152	96	17	SENE	AMERADA PETROL. CORP. HALVOR ROLFSRUD #1	2457	7432	7706	274	0	4
11620	152	96	20	NENE	EXXON CORP. ROLFSRUD UNIT 1	2432	7438	7710	272	0	33
957	152	96	21	SWSE	AMERADA PETROL. CORP. H. ELLESTAD #1	2397	7460	7723	263	0	0
8796	152	96	22	SWNE	ENERGETICS, INC. WISNESS #32-22	2400	7413	7687	274	0	6
9081	152	96	23	NESE	GETTY OIL CO. CLEAR CREEK UNIT #22	2391	7550	7733	183	0	23

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
2893	152	96	23	SENW	SKELLY OIL CO. LESTER WISNESS 1	2389	7510	7703	193	0	0
2836	152	96	23	SWSE	SKELLY OIL CO. BERGET ESTATE 1	2421	7580	7787	207	0	80
2764	152	96	23	SWSW	SKELLY OIL CO. K. S. HALVERSON 1	2344	7460	7673	213	0	0
1085	152	96	24	SENE	SKELLY OIL CO. CLEAR CREEK-MAD. U. #19	2457	7595	7850	255	0	12
2944	152	96	24	SWNW	SKELLY OIL CO. CLEAR CREEK-MAD. U. #1	2429	7557	7722	165	0	0
2903	152	96	24	SWSW	HUNT OIL CO. P. O. JOHNSON #1	2451	7620	7835	215	0	50
41	152	96	26	NESE	AMERADA PETROL. CORP. K. HALVORSEN #1	2358	7620	7800	180	0	0
2787	152	96	26	SWNE	SKELLY OIL CO. THELMA ANDERSON 1	2357	7578	7742	164	0	15
2737	152	96	26	SWNW	SKELLY OIL CO. T. H. ANDERSON 1	2336	7505	7688	183	0	0
2763	152	96	26	SWSW	SKELLY OIL CO. LLOYD ANDERSON 1	2395	7593	7767	174	0	0
2594	152	96	27	NENW	SKELLY OIL CO. L. G. QUALE #1	2379	7437	7705	268	0	70
9038	152	96	27	NESE	GETTY OIL CO. CLEAR CREEK UNIT #21	2366	7495	7718	223	0	0
2593	152	96	27	SWNE	SKELLY OIL CO. GEORGE WOLLAN 1	2324	7405	7664	259	0	10
2252	152	96	27	SWSE	SKELLY OIL CO. DAKOTA "A" 1	2373	7500	7748	248	0	7
11228	152	96	27	SWSW	GETTY OIL CO. CLEAR CREEK 27-13	2312	7440	7681	241	0	0
2901	152	96	32	NESW	AMERADA PETROL. CORP. ERLING ROLFSRUD #1	2271	7437	7678	241	0	5
11463	152	96	32	SWSE	TEXACO, INC. STATE OF N. D. "E" 1	2279	7460	7700	240	0	6
2982	152	96	33	NENE	SKELLY OIL CO. OTTO TANK 2	2312	7450	7695	245	0	17
1995	152	96	34	NENW	SKELLY OIL CO. OTTO TANK #1	2328	7470	7710	240	0	0
2797	152	96	34	NESW	SKELLY OIL CO. LARSON "A" 1	2388	7582	7800	218	0	0
2144	152	96	34	SWNE	SKELLY OIL CO. J. C. LARSON 1	2354	7550	7760	210	0	10
3946	152	96	35	SWNE	SKELLY OIL CO. CLEAR CREEK-MAD. U. #20	2420	7700	7870	170	0	25
2726	152	96	35	SWNW	SKELLY OIL CO. L. I. ANDERSON 1	2396	7610	7806	196	0	0
9717	152	97	31	SWSE	AMAREX, INC. VAN DYKE #1	2165	7857	8083	226	0	0
11907	152	98	10	SWSW	ENSOURCE, INC. GUNDERSON 1-10	2162	8000	8233	233	0	5
8626	152	98	17	SWNE	PATRICK PETROL. CO. ENDERUD #1-17	2327	8173	8405	232	0	0
8678	152	99	25	SENE	DONALD C. SLAWSON STATE OF NORTH DAKOTA #25-1	2145	8035	8255	220	0	4
2849	152	99	31	NESW	LYDA HUNT-HERBERT TRUSTS H. C. HYSTAD #1	2316	8188	8410	222	0	6
8788	152	99	31	NESW	EXETER EXPLOR. CO. HYSTAD #11-31	2276	8118	8345	227	0	6
9793	152	100	30	SENE	EXETER EXPLOR. CO. SCHMITZ #8-30	2091	7900	8128	228	0	5
9619	152	100	34	SWNE	EXETER EXPLOR. CO. SYVERSON #7-34	2208	8065	8288	223	0	6
9283	152	100	36	SESE	EXETER EXPLOR. CO. STATE OF N. D. #16-36	2369	8205	8410	205	0	7
11200	152	101	3	SWSW	SUPERIOR OIL CO. LINDVIG 3-14	2180	7843	8060	217	0	8
11323	152	101	4	SWSE	SUPERIOR OIL CO. LINDVIG 4-34	2226	7900	8113	213	0	7
11151	152	101	4	SWSW	GULF OIL CORP. LINDVIG 1-4-40	2230	7900	8115	215	0	7

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
6946	152	101	5	NENW	GULF OIL CORP. CLARA ECKERT #1-5	2198	7870	8068	198	0	0
10089	152	101	5	NESW	GULF OIL CORP. ECKERT FOUNDATION #2-5-4B	2257	7954	8147	193	0	0
11070	152	101	5	NWNE	GULF OIL CORP. ECKERT FOUNDATION 5-5-2A	2246	7907	8120	213	0	7
11009	152	101	5	NWNW	SUPERIOR OIL CO. ECKERT FOUNDATION 5-12B	2240	7917	8111	194	0	0
10812	152	101	5	NWSE	GULF OIL CORP. ECKERT FOUNDATION 4-5-3A	2276	7968	8162	194	0	6
10655	152	101	5	SWNW	GULF OIL CORP. ECKERT FOUNDATION #3-5-1D	2243	7922	8120	198	0	0
6501	152	101	6	NESE	GULF OIL CORP. ECKERT FOUNDATION #1	2214	7894	8086	192	0	0
10190	152	101	6	SENW	COTTON PETROL. CORP. FJELSTAD #1-6	2202	7899	8091	192	0	0
10527	152	101	6	SENW	COTTON PETROL. CORP. FJELSTAD #3-6	2182	7878	8070	192	0	5
10088	152	101	6	SWNE	GULF OIL CORP. ECKERT FOUNDATION #2-6-2D	2200	7870	8072	202	0	0
10693	152	101	6	SWSE	SUPERIOR OIL CO. ECKERT FOUNDATION #5-6	2229	7898	8097	199	0	0
10472	152	101	6	SWSW	COTTON PETROL. CORP. FJELSTAD #2-6	2254	7948	8145	197	0	3
10685	152	101	7	NENE	SUPERIOR OIL CO. ECKERT FOUNDATION #7-2	2245	7922	8136	214	0	0
9430	152	101	7	SWNW	SUPERIOR OIL CO. M. J. GREEN #1	2294	7975	8175	200	0	6
11181	152	101	8	NENE	POGO PRODUCING CO. SCHMITZ 1-8	2227	7914	8128	214	0	3
11209	152	101	8	NENW	POGO PRODUCING CO. ECKERT FOUNDATION 2-8	2264	7954	8150	196	0	0
11613	152	101	9	NENE	SUPERIOR OIL CO. LINDVIG 9-41	2231	7895	8110	215	0	10
8963	152	101	9	NWSW	POGO PRODUCING CO. SCHMIDTZ #1-9	2193	7900	8110	210	0	7
11316	152	101	10	NENW	SUPERIOR OIL CO. LINDVIG 10-21	2172	7845	8058	213	0	7
10829	152	101	10	NWSE	SUPERIOR OIL CO. ANDERSON 10-33	2142	7828	8060	232	0	7
11614	152	101	10	NWSW	SUPERIOR OIL CO. SHAE 10-13	2195	7895	8110	215	0	8
11059	152	101	10	SWNE	SUPERIOR OIL CO. ANDERSON 10-32	2137	7825	8043	218	0	7
11199	152	101	11	NWNW	SUPERIOR OIL CO. LINDVIG 11-11	2144	7870	8100	230	0	10
9767	152	101	11	SESW	SUPERIOR OIL CO. LINDVIG-DAVIDSON "B" #11-1	2146	7870	8100	230	0	7
9696	152	101	14	SWNW	SUPERIOR OIL CO. LINDVIG-DAVIDSON "A" #14-1	2091	7820	8042	222	0	6
10656	152	101	15	NENW	SUPERIOR OIL CO. LINDVIG-DAVIDSON #15-2	2135	7838	8060	222	0	7
9654	152	101	15	SWNE	SUPERIOR OIL CO. LINDVIG-DAVIDSON #15-1	2115	7828	8045	217	0	7
10836	152	101	15	SWSW	SUPERIOR OIL CO. LINDVIG-DAVIDSON 15-14	2079	7806	8022	216	0	7
11747	152	101	17	NWNW	SUPERIOR OIL CO. NELSON 17-11	2210	7900	8103	203	0	5
10378	152	101	18	NESW	SUPERIOR OIL CO. GREEN #18-1	2296	8007	8195	188	0	6
9709	152	101	20	NWSE	SUPERIOR OIL CO. KIIHN #20-1	2213	7943	8135	192	0	7
9621	152	101	21	SENE	SUPERIOR OIL CO. ABELMAN #1	2147	7887	8090	203	0	5
10853	152	101	21	SWSW	SUPERIOR OIL CO. KIIHN 21-14	2195	7930	8127	197	0	4
9716	152	101	22	NWSW	SUPERIOR OIL CO. ABELMAN-DAVIDSON #22-1	2142	7900	8112	212	0	6
9504	152	101	28	E2NW	SUPERIOR OIL CO. STEPANEK ET AL #1	2195	7908	8108	200	0	6

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10694	152	101	28	NWNE	SUPERIOR OIL CO. ABELMANN-DAVIDSON #28-2	2176	7895	8095	200	0	5
9708	152	101	29	NWNE	SUPERIOR OIL CO. RETTIG #29-1	2285	8013	8200	187	0	3
9593	152	101	29	SESW	SUPERIOR OIL CO. NELSON "A" #1	2163	7895	8080	185	0	5
11273	152	102	1	NESE	SUPERIOR OIL CO. NELSON 1-43	2240	7950	8140	190	0	0
10379	152	102	1	SENE	COTTON PETROL. CORP. FJELSTAD #1-1	2193	7900	8089	189	0	0
9507	152	102	1	SWSE	SUPERIOR OIL CO. NELSON ET AL #2	2257	7965	8157	192	0	0
10658	152	102	1	SWSE	SUPERIOR OIL CO. NELSON #2-2	2256	7957	8148	191	0	0
11407	152	102	2	SWNE	COTTON PETROL. CORP. FREDRICKSON 1-2	2106	7780	7985	205	0	7
12213	152	102	4	NWNE	SONAT EXPLOR. CO. SCHMITZ #1-4	1995	7670	7875	205	0	3
12291	152	102	5	SWSE	GENERAL ATLANTIC ENERGY CORP. GAEC - CRATCHETT #34-5	2056	7730	7900	170	0	5
8285	152	102	8	SWNE	GULF OIL CORP. REHBERG #1-8-2D	1989	7678	7844	166	0	0
10365	152	102	10	SESE	MESA PETROL. CO. ROEN 10 #1	2182	7900	8080	180	0	5
10517	152	102	11	NENW	SUPERIOR OIL CO. LINDVIG "A" #11-1	2101	7823	8013	190	0	5
9653	152	102	11	NESW	SUPERIOR OIL CO. CUTLIP #1	2181	7920	8097	177	0	5
8789	152	102	12	NENE	SUPERIOR OIL CO. NELSON ET AL #1	2277	7970	8156	186	0	0
10723	152	102	12	NENE	SUPERIOR OIL CO. NELSON ET AL #1-2	2272	7966	8150	184	0	5
11552	152	102	12	NENW	SUPERIOR OIL CO. NELSON 12-21	2218	7945	8127	182	0	8
10162	152	102	13	NENE	SUPERIOR OIL CO. HOEHN #13-2	2273	7990	8178	188	0	5
545	152	102	13	NESE	PHILLIPS PETROL. CO. F. G. HOEHN "A" #1	2278	7960	8165	205	0	4
9606	152	102	13	SENW	SUPERIOR OIL CO. HELGESON-HOEHN #1	3338	7940	8120	180	0	5
11503	152	102	13	SENW	SUPERIOR OIL CO. HELGESON-HOEHN 13-22	2233	7930	8110	180	0	5
9104	152	102	14	C NE	MESA PETROL. CO. ROEN #14-1	2209	7960	8140	180	0	6
10240	152	102	16	SWSW	SUPERIOR OIL CO. STATE #16-1	2185	7875	8050	175	0	5
10110	152	102	17	NWSE	GETTY OIL CO. CROWFLY #17-10	2152	7833	8020	187	0	0
11202	152	102	19	NENW	COTTON PETROL. CORP. AAMODT 1-19	2175	7860	8040	180	0	0
10932	152	102	21	NESE	EASON OIL CO. ECKERT FOUNDATION 1	2241	7972	8133	161	0	0
8087	152	102	22	SWSW	BWAB, INC. ECKERT FOUNDATION #22-14X	2257	7963	8140	177	0	0
9681	152	102	23	E2SW	SUPERIOR OIL CO. M. L. ROEN #23-1	2257	7990	8155	165	0	6
10046	152	102	23	NESE	SUPERIOR OIL CO. BARROWS "A" #1	2224	7935	8110	175	0	5
9790	152	102	23	SENE	SUPERIOR OIL CO. HOEHN #1	2277	8000	8130	130	0	0
9006	152	102	23	SESE	SUPERIOR OIL CO. BARROWS #1	2232	7933	8108	175	0	0
9420	152	102	24	C SW	SUPERIOR OIL CO. BARROWS ET AL #2	2245	7967	8137	170	0	5
8240	152	102	25	NESW	TRAVERSE OIL CO. NORTH ALEXANDER PROSPECT #1	2147	7867	8038	171	0	5
10675	152	102	25	NWNE	TOM BROWN, INC. NOVAK #25-31	2228	7937	8110	173	0	5
10127	152	102	25	NWNW	TOM BROWN, INC. NOVAK #25-11	2218	7920	8090	170	0	5

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
9948	152	102	26	NENE	TOM BROWN, INC. NOVAK #26-41	2181	7900	8070	170	0	5
10487	152	102	27	SWSW	SAGE ENERGY CO. FLB-MONSON #14-27	2286	8020	8170	150	0	5
11084	152	102	29	NWSW	SUN EXPLOR. & PROD. CO. IVERSON-PAPINEAU UNIT 1	2192	7925	8100	175	0	0
9999	152	102	31	NWSE	SUN EXPLOR. & PROD. CO. ERICKSON "A" #1	2218	7925	8080	155	0	0
10960	152	102	31	S2NW	SUPERIOR OIL CO. PAPINEAU 31-12	2177	7874	8050	176	0	4
9755	152	102	31	SESW	SUN EXPLOR. & PROD. CO. D. M. IVERSON #1-31	2192	7897	8050	153	0	6
10075	152	102	32	E2SE	SAGE ENERGY CO. SIMONIEG 32-1	2276	8012	8164	152	0	0
9666	152	102	32	NENE	HART EXPLOR. & PROD. CO. LADD COLE #1-32	2249	7978	8127	149	0	0
10153	152	102	32	SWSW	SAGE ENERGY CO. PAPINEAU 32 #1	2242	7970	8112	142	0	0
8795	152	102	33	NENW	AMOCO PROD. CO. MONSON "B" #1	2266	8000	8150	150	0	4
11537	152	102	33	NESW	MARSHALL & WINSTON, INC. GRIFFITH 1	2265	8000	8152	152	0	0
7854	152	102	33	SENE	AMOCO PROD. CO. MONSON #1	2289	8025	8175	150	0	0
8766	152	102	33	SESE	AMOCO PROD. CO. GRIFFITH "A" #1	2287	8015	8175	160	0	0
10187	152	102	34	NESW	SUPERIOR OIL CO. NOWSTRUP #34-1	2240	7965	8127	162	0	4
8673	152	102	34	SENE	SUPERIOR OIL CO. DONALD LINK #2	2306	8010	8170	160	0	0
9385	152	102	34	SENW	AMOCO PROD. CO. MONSON AMOCO "C" #1	2275	7992	8157	165	0	0
9618	152	102	35	NWSE	SUPERIOR OIL CO. NOVAK #1	2171	7890	8053	163	0	4
9203	152	102	35	NWSW	SUPERIOR OIL CO. ANITA MONSON #1	2270	7980	8135	155	0	5
10936	152	102	35	SESE	SUPERIOR OIL CO. NOVAK 35-44	2165	7890	8052	162	0	5
6790	152	102	35	SWNW	SUPERIOR OIL CO. DONALD LINK ET AL #1	2276	7970	8125	155	0	5
11597	152	102	36	SESE	EXXON CO., USA STATE OF N. D. 2	2108	7845	8020	175	0	5
7932	152	102	36	SWSE	EXXON CORP. STATE OF N. D. #1	2142	7873	8044	171	0	5
11027	152	102	36	SWSW	EXXON CORP. STATE OF N. D. "B" 1	2150	7888	8050	162	0	5
11636	152	103	1	NWNW	HARDY INVEST. CO. SANDVIK 11-1	1876	7507	7707	200	0	6
11824	152	103	2	SWSW	SUN EXPLOR. & PROD. CO. BERGSTROM-GARDNER 1	1879	7508	7690	182	0	7
11495	152	103	3	C SE	SUN EXPLOR. & PROD. CO. BERGSTROM FEDERAL STATE 1	1878	7480	7658	178	0	6
9518	152	103	3	NWNW	SUN EXPLOR. & PROD. CO. CLARENCE JOHNSRUD #1-3	1892	7500	7685	185	0	5
9991	152	103	3	SWNE	SUN EXPLOR. & PROD. CO. V. J. OSTER #1	1880	7490	7675	185	0	6
11498	152	103	3	SWNW	SUN EXPLOR. & PROD. CO. OYLOE STATE FEDERAL 1	1883	7595	7765	170	0	0
9784	152	103	4	NENE	DEPCO, INC. HOUSTON #41-4	1880	7465	7695	230	0	6
10080	152	103	4	NWSE	SUN EXPLOR. & PROD. CO. GRACE OYLOE #1-4	1886	7478	7655	177	0	5
11775	152	103	9	NWNE	SUN EXPLOR. & PROD. CO. OYLOE STATE 1	1889	7500	7673	173	0	6
10886	152	103	17	NENE	SAGE ENERGY CO. L. GREEN 41-17	1882	7498	7650	152	0	4
10887	152	103	17	SWSE	SAGE ENERGY CO. RIDER 34-17	1880	7505	7673	168	0	4
11827	152	103	19	NESW	SUN EXPLOR. & PROD. CO. J. D. GANNAWAY 1	1879	7505	7665	160	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
11694	152	103	19	SWSE	SUN EXPLOR. & PROD. CO. GANNAWAY FEDERAL 1	1888	7548	7691	143	0	0
11452	152	103	20	NWSE	SUN EXPLOR. & PROD. CO. RIDER FEDERAL STATE 1	1890	7643	7805	162	0	0
11731	152	103	20	SESW	EXXON CO., USA RIDER STATE COM. 1	1894	7530	7680	150	0	0
11299	152	103	21	NESE	SUN EXPLOR. & PROD. ERICKSON STATE 1	1879	7490	7655	165	0	0
11732	152	103	21	SESW	MARSHALL & WINSTON, INC. MISSOURI UNIT 1	1885	7508	7662	154	0	0
11393	152	103	22	SWSE	SUN EXPLOR. & PROD. CO. ERICKSON "H" 1	2102	7740	7903	163	0	0
11300	152	103	22	SWSW	SUN EXPLOR. & PROD. ERICKSON "G" 1	2083	7710	7861	151	0	0
11169	152	103	25	NENW	TEXACO, INC. ROBERT L. ERICKSON 2	2113	7793	7968	175	0	0
11065	152	103	26	NWNW	TEXACO, INC. R. N. ERICKSON ET AL 1	2130	7800	7950	150	0	0
11085	152	103	26	SWNE	TEXACO, INC. R. L. ERICKSON 1	2084	7750	7917	167	0	0
10566	152	103	27	NWNE	SUN EXPLOR. & PROD. CO. ERICKSON #2	2108	7760	7910	150	0	0
9403	152	103	27	NWSE	SUN EXPLOR. & PROD. CO. ERICKSON #1-27	2180	7820	7980	160	0	0
11145	152	103	27	NWSW	SUN EXPLOR. & PROD. CO. ERICKSON 5	2118	7770	7915	145	0	0
11143	152	103	27	SENW	SUN EXPLOR. & PROD. CO. ERICKSON 4	2119	7760	7912	152	0	0
11144	152	103	28	NENE	SUN EXPLOR. & PROD. CO. LASSEY-ERICKSON "A" 1	2091	7708	7868	160	0	0
10440	152	103	28	NWSW	SUN EXPLOR. & PROD. CO. M. L. LASSEY "A" #1	2159	7804	7953	149	0	0
10921	152	103	28	SWSE	SUN EXPLOR. & PROD. CO. LASSEY-MYERS 1	2112	7751	7893	142	0	0
11157	152	103	29	NESW	SUN EXPLOR. & PROD. CO. LINDSLEY DOBIAS UNIT 1	1975	7596	7790	194	0	0
10899	152	103	29	SENE	SUN EXPLOR. & PROD. CO. LINDSLEY STATE UNIT 1	2150	7760	7920	160	0	0
11364	152	103	29	SENW	MARSHALL & WINSTON, INC. BIG RIVER 1	2082	7785	7935	150	0	0
10923	152	103	29	SESE	SUN EXPLOR. & PROD. CO. LASSEY-LINDSLEY 1	2118	7750	7895	145	0	0
11460	152	103	30	E2SW	SUN EXPLOR. & PROD. CO. DOBIAS STATE "B" 1	2042	7680	7840	160	0	4
11831	152	103	30	NENE	COLUMBIA GAS DEVELOP. CORP. FEDERAL RYDER 30-1	1890	7526	7690	164	0	0
11340	152	103	30	NESE	SUN EXPLOR. & PROD. CO. DOBIAS STATE "A" #1	1968	7605	7765	160	0	0
11078	152	103	31	NWNE	SUN EXPLOR. & PROD. CO. DOBIAS STATE UNIT 1	2139	7750	7910	160	0	0
10950	152	103	32	NENE	SUN EXPLOR. & PROD. CO. LASSEY MONSON 1	2145	7774	7919	145	0	0
11355	152	103	32	NENW	SUN EXPLOR. & PROD. CO. DOBIAS MONSON #1	2118	7740	7898	158	0	0
11458	152	103	32	NWSE	TENNECO OIL CO. MONSON 3-32	2142	7785	7935	150	0	0
11177	152	103	33	NENE	SUN EXPLOR. & PROD. CO. LASSEY-MYERS "A" 1	2152	7794	7952	158	0	0
10922	152	103	33	NENW	SUN EXPLOR. & PROD. CO. A. M. LASSEY 1	2175	7805	7963	158	0	4
10881	152	103	33	NESE	SUN EXPLOR. & PROD. CO. G. A. MEYERS 1	2211	7883	8021	138	0	0
11499	152	103	33	NESW	SUN EXPLOR. & PROD. CO. A. M. LASSEY 2	2194	7838	7993	155	0	0
11146	152	103	34	NWNE	SUN EXPLOR. & PROD. CO. ERICKSON 6	2179	7830	7985	155	0	0
10879	152	103	34	SESE	SUN EXPLOR. & PROD. CO. ERICKSON 3	2262	7946	8088	142	0	0
10880	152	103	34	SWNW	SUN EXPLOR. & PROD. CO. LASSEY-ERICKSON UNIT 1	2187	7848	8005	157	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10439	152	103	34	SWSW	SUN EXPLOR. & PROD. CO. M. L. LASSEY #1	2208	7877	8019	142	0	0
10979	152	103	35	SENE	SUN EXPLOR. & PROD. CO. JUNE O'CONNOR	2141	7814	7978	164	0	4
11339	152	103	35	SWNW	SUN EXPLOR. & PROD. CO. ERICKSON "J" #1	2183	7845	8003	158	0	0
10662	152	103	35	SWSE	DEPCO, INC. O'CONNOR #34-35	2170	7864	8012	148	0	0
11408	152	103	35	SWSW	DEPCO, INC. GLASSBLUFF 14-35	2256	7940	8087	147	0	0
10064	152	103	36	NWNW	SUN EXPLOR. & PROD. CO. GARRISON IV STATE #1	2138	7840	8005	165	0	0
10193	152	103	36	NWSW	SUN EXPLOR. & PROD. CO. GARRISON IV STATE #2	2188	7890	8042	152	0	0
10103	152	103	36	SWNE	SUN EXPLOR. & PROD. CO. IVERSON STATE #2	2192	7900	8067	167	0	0
8178	152	104	2	NWNW	MOSBACHER PRUET OIL CO. OTTO M. SEEL #2-1	2169	7725	7905	180	0	0
12225	152	104	3	NWSW	ARCO OIL & GAS CO. ARCO ZIMMERMAN #3-1	2142	7685	7855	170	0	0
11113	152	104	3	SWNE	SUN EXPLOR. & PROD. CO. ZIMMERMAN-SEEL 1	2107	7676	7830	154	0	0
8270	152	104	4	NENE	MOSBACHER PRUET OIL CO. OTTO M. SEEL #4-1	2217	7750	7935	185	0	0
11674	152	104	4	NESW	LADD PETROL. CORP. STRINDEN 1	2026	7555	7737	182	0	0
12146	152	104	10	SENW	COLUMBIA GAS DEVELOP. CORP. ZIMMERMAN #10-2	2001	7543	7712	169	0	4
11466	152	104	10	SESW	COLUMBIA GAS DEVELOP. CORP. ROGERS 15-1	1945	7490	7657	167	0	0
12065	152	104	15	NWNE	COLUMBIA GAS DEVELOP. CORP. DISHON 15-1	1930	7480	7648	168	0	0
12120	152	104	15	NWNW	COLUMBIA GAS DEVELOP. CORP. ROGERS-FEDERAL #15-1	1939	7500	7667	167	0	0
11854	152	104	24	SENE	SUN EXPLOR. & PROD. CO. DAHL 1	1888	7510	7672	162	0	0
11416	152	104	36	SWSW	DONALD C. SLAWSON SORENSON 1-36	1940	7523	7687	164	0	0
1061	153	84	30	SWSW	CALVERT DRILLING CO. GILBERT JACOBSON #1	2112	0	0	0	0	0
105	153	85	2	SWNE	STANOLIND OIL & GAS CO. WALTER & INGEBERG WASWICK #1	2175	0	0	0	0	0
5098	153	85	7	SENW	I. J. WILHITE RUBBELKE #1	2149	5650	5730	80	0	0
5158	153	85	13	NENW	UNION OIL CO. OF CALIFORNIA MYRTLE HANSON #1-C-13	2117	0	0	0	0	0
5198	153	85	26	NENW	UNION OIL CO. OF CALIFORNIA E. J. KARNA #1-C	2105	5515	5550	35	0	0
6664	153	85	32	SENW	MARATHON OIL CO. POLLOCK #1	2134	5653	5760	107	0	0
5903	153	86	8	NWNW	TRUE OIL CO. FREEMAN #11-8	2083	5720	5970	250	0	60
2051	153	86	28	SENE	DAVIS OIL CO. ALLEN PETERSON #1	2117	5792	5930	138	0	22
8654	153	87	8	NWNE	MITCHELL ENERGY CORP. MABEL MILLER #1-8	2121	6028	6292	264	0	0
6637	153	87	24	SESE	W. H. HUNT TRUST ESTATE ZABLOTNEY #1	2098	5870	6000	130	0	0
7708	153	87	27	SENW	MITCHELL ENERGY CORP. WHITE FARM #1	2077	5955	6132	177	0	4
12393	153	87	31	SESE	HPC, INC. TVEDT #44-31	2104	6178	6400	222	0	0
12421	153	87	31	SESW	HPC, INC. BRAAFLAT #24-31	2109	6202	6433	231	0	0
6872	153	88	16	NESE	MARATHON OIL CO. MAE OLSON #1	2108	6277	6425	148	0	0
7471	153	89	10	NENW	MARATHON OIL CO. BARTLESON #10-21	1979	6345	6525	180	0	0
3317	153	92	25	NWNE	JACK GRYNBERT ELSWORTH JOHNSONBERG #1	2308	7483	7670	187	10	10

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
2226	153	94	18	SWNW	AMERADA PETROL. CORP. U.S.A. THOMAS #1	2134	7450	7695	245	0	0
11935	153	94	18	SWSE	EDWIN L. COX & BERRY R. COX FROHOLM 1-18	2102	7480	7745	265	0	10
4098	153	94	19	SESW	LLOYD H. SMITH FROHOLM ESTATE #1	2241	7330	7603	273	0	10
4047	153	94	19	SWSE	LLOYD H. SMITH FROHOLM GOVERNMENT #1	2234	7378	7622	244	0	0
2645	153	94	21	NESW	AMERADA PETROL. CORP. U.S.A. FOREST #1	2199	7785	8030	245	0	8
8125	153	94	29	SESE	ENERGETICS, INC. FELLAND #44-29	2176	7477	7717	240	0	0
2841	153	94	29	SESW	LLOYD H. SMITH F. E. WEEDEMAN "A" #1	2193	7328	7570	242	0	0
4018	153	94	29	SWNW	LLOYD H. SMITH D. GILBERTSON #1	2234	7390	7633	243	0	0
4118	153	94	30	NENE	AMERADA PETROL. CORP. FROHOLM UNIT #1	2247	7444	7640	196	0	8
2665	153	94	30	NWSE	AMERADA PETROL. CORP. OLESON UNIT #1	2245	7360	7590	230	0	0
2839	153	94	30	SENW	AMERADA PETROL. CORP. MCKEEN U. #1	2232	7330	7565	235	0	0
2512	153	94	31	SESE	AMERADA PETROL. CORP. ELDRED BRENNA TRACT 2 #3	2254	7410	7640	230	0	0
4239	153	94	32	NESW	AMERADA PETROL. CORP. ANTELOPE-DEV. U. #3	2260	7368	7612	244	0	0
1564	153	94	32	NWNE	AMERADA PETROL. CORP. F. E. WEEDEMAN TRACT 1 NO. 2	2174	7327	7570	243	0	10
1335	153	94	32	NWNW	AMERADA PETROL. CORP. EDNA NIELSON #1	2205	7303	7550	247	0	0
3323	153	94	32	NWNW	AMERADA PETROL. CORP. ANTELOPE U. E #1	2224	7320	7567	247	0	0
1495	153	94	32	NWSE	AMERADA PETROL. CORP. OSCAR MOE #2	2245	7345	7590	245	0	0
2316	153	94	32	NWSW	AMERADA PETROL. CORP. ELDRED BRENNA T-2 #2	2228	7325	7577	252	0	0
1359	153	94	32	SENE	AMERADA PETROL. CORP. C. O. FELLAND #1	2196	7354	7600	246	0	0
1282	153	94	32	SENW	AMERADA PETROL. CORP. F. E. WEEDEMAN TRACT 1 #1	2216	7310	7550	240	0	0
1186	153	94	32	SESE	AMERADA PETROL. CORP. OSCAR MOE #1	2293	7454	7635	181	0	0
1319	153	94	32	SESW	AMERADA PETROL. CORP. ELDRED BRENNA TR2 #1	2281	7390	7635	245	0	0
2317	153	94	33	NWNW	AMERADA PETROL. CORP. C. O. FELLAND #2	2175	7468	7710	242	0	0
1886	153	94	33	NWSE	AMERADA PETROL. CORP. JOHN DINWOODIE #1	2259	7660	7865	205	0	0
1269	153	94	33	NWSW	AMERADA PETROL. CORP. G. A. MORAN #1	2229	7415	7640	225	0	0
1563	153	94	33	SESW	AMERADA PETROL. CORP. G. A. MORAN #2	2242	7483	7660	177	0	0
4256	153	94	33	SWSW	AMERADA PETROL. CORP. ANTELOPE-DEV. U. #6I	2240	7400	7615	215	0	0
1473	153	95	2	NWSW	THE TEXAS CO. GOV'T. DOROUGH "C" (NCT-1) #9	2135	6973	7210	237	0	5
540	153	95	3	NENW	TEXACO, INC. GOV'T. DOROUGH "A"(NCT-2) #1	2151	6900	7150	250	0	6
4264	153	95	3	NENW	TEXACO, INC. AMERADA GOV'T. DOROUGH "A" #3	2193	6940	7200	260	0	18
9393	153	95	3	NENW	TEXACO, INC. CHARLSON DEEP UNIT #2	2195	6940	7197	257	0	20
10973	153	95	3	NENW	TEXACO, INC. CHARLSON NORTH UNIT A-203X	2160	6910	7160	250	0	5
573	153	95	3	NWNE	TEXACO, INC. GOV'T. DOROUGH "C"(NCT-1)#1	1931	6698	6950	252	0	15
7686	153	95	3	NWNE	TEXACO, INC. SILURIAN UNIT 7 #1X	1971	6720	6975	255	0	23
11710	153	95	3	NWNW	TEXACO, INC. CMNU A-103X	1977	6735	6977	242	0	3

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827	153	95	3	NWSW	TEXACO, INC. GOV'T. DOROUGH "C"(NCT-1)#2	2260	7027	7275	248	0	0
5132	153	95	3	SENW	TEXACO, INC. CHARLSON MADISON NORTH UNIT #B203	2213	6975	7217	242	0	8
6962	153	95	3	SESE	TEXACO, INC. SILURIAN UNIT 4 #1	2247	7047	7288	241	0	0
7002	153	95	3	SESW	TEXACO, INC. SILURIAN UNIT 6 #1	2269	7052	7300	248	0	0
5412	153	95	3	SWNE	TEXACO, INC. DEVONIAN UNIT #8 #1	2022	6820	7057	237	0	0
10822	153	95	3	SWNW	TEXACO, INC. CMNU B-103	2261	7007	7266	259	0	15
7072	153	95	4	NESE	TEXACO, INC. SILURIAN UNIT 11 #1	2307	7082	7345	263	0	3
878	153	95	4	NWNE	TEXACO, INC. STEVE YTTREDAHL #1	2030	6770	7028	258	0	5
1086	153	95	4	NWNW	TEXACO-AMERADA STEVE YTTREDAHL U. #3	2038	6775	7035	260	0	0
7825	153	95	4	NWNW	TEXACO, INC. SILURIAN UNIT 17 #1	2040	6780	7040	260	0	0
11221	153	95	4	SENE	TEXACO, INC. CMNU B-404X	2252	7027	7288	261	0	13
965	153	95	4	SENW	TEXACO-AMERADA STEVE YTTREDAHL U #2	2045	6800	7053	253	0	0
915	153	95	4	SESW	TEXACO, INC. GOV'T. DOROUGH "B"(NCT-2)#2	2147	6933	7165	232	0	0
5348	153	95	4	SWNE	TEXACO, INC. CHARLSON-DEV. UNIT NO. 6 #1	2277	7033	7288	255	0	0
7780	153	95	4	SWNE	TEXACO, INC. SILURIAN UNIT 12 #1	2282	7036	7283	247	0	0
5742	153	95	4	SWSW	TEXACO, INC. DEVONIAN UNIT NO. 2 #1X	2229	7000	7240	240	0	0
10823	153	95	5	NESW	TEXACO, INC. CHARLSON MADISON NORTH UNIT C-205	2037	6785	7005	220	0	0
972	153	95	5	NWNW	TEXACO, INC. E. D. PETERSON TRACT 1 #1	1946	6675	6905	230	0	0
2574	153	95	5	NWSE	TEXACO, INC. GOV'T. DOROUGH UNIT 2 #1	2007	6755	6993	238	0	0
879	153	95	5	NWSW	TEXACO, INC. MCKENZIE CO. #2	1943	6680	6905	225	0	0
7988	153	95	5	NWSW	TEXACO, INC. RED RIVER UNIT 2 #1	1999	6755	6973	218	0	0
1110	153	95	5	SENE	TEXACO, INC. YTTREDAHL UNIT #4	1946	6750	6930	180	0	0
1171	153	95	5	SENW	TEXACO, INC. GOV'T. DOROUGH "B" (NCT-3) #2	1924	6648	6890	242	0	0
11983	153	95	5	SESE	TEXACO, INC. SILURIAN UNIT 51-1	2140	6920	7138	218	0	0
2529	153	95	5	SESW	TEXACO, INC. CHARLSON-MAD. (NORTH) U. D205	2035	6775	7018	243	0	0
977	153	95	6	NWSE	AMERADA PETROL. CORP. HELEN C. VOLKMAN #4	2130	6920	7095	175	0	10
5663	153	95	6	NWSE	TEXACO, INC. DEVONIAN UNIT 9 #1	2192	6980	7152	172	0	0
1365	153	95	6	NWSW	TEXACO, INC. MCKENZIE CO. (NCT-2) #3	2131	6865	7125	260	0	0
786	153	95	6	SESE	AMERADA PETROL. CORP. HELEN C. VOLKMAN #2	2003	6780	6980	200	0	0
9875	153	95	6	SWNE	TEXACO, INC. S. A. GARLAND #6	2150	6910	7100	190	0	10
889	153	95	7	NWNE	AMERADA PETROL. CORP. HELEN VOLKMAN #3	2026	6795	7007	212	0	0
3488	153	95	7	NWNE	AMERADA PETROL. CORP. USA VOLKMAN UNIT #1	2070	6857	7057	200	0	10
6287	153	95	7	NWNE	AMERADA HESS CORP. USA VOLKMANN #1-X	2073	6855	7068	213	0	10
1590	153	95	7	NWNW	TEXACO, INC. MCKENZIE CO. (NCT-2) #4	2245	6976	7250	274	0	0
11887	153	95	7	NWNW	TEXACO, INC. SILURIAN UNIT 46-1	2245	6977	7252	275	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
542	153	95	7	SENE	TEXACO, INC. HELEN C. VOLKMAN 1	2299	7052	7285	233	0	0
440	153	95	7	SESE	TEXACO, INC. THOMPSON #2	2353	7083	7343	260	0	0
2099	153	95	7	SESE	TEXACO, INC. G. L. THOMPSON "A" #2	2362	7100	7360	260	0	0
11063	153	95	7	SESE	TEXACO, INC. SILURIAN UNIT 31-1	2361	7090	7347	257	0	0
630	153	95	7	SESW	TEXACO, INC. GOV'T. DOROUGH "B"(NCT-1) #2	2239	7002	7270	268	0	5
11353	153	95	7	SESW	TEXACO, INC. SILURIAN UNIT 39-1	2276	7032	7307	275	0	6
2560	153	95	8	NWNE	TEXACO, INC. GOV'T. DOROUGH UNIT #1	2048	6785	7022	237	0	0
478	153	95	8	NWSE	HUNT OIL CO. JOHN ISSACSON #1	2379	7198	7373	175	0	0
477	153	95	8	NWSW	HUNT OIL CO. OLA HAUGEN #1	2389	7160	7375	215	0	0
3533	153	95	8	NWSW	HUNT OIL CO. HAUGEN UNIT #1	2396	7165	7393	228	0	0
11352	153	95	8	SENE	TEXACO, INC. SILURIAN UNIT 41-1	2061	6840	7079	239	0	0
2477	153	95	8	SENW	TEXACO, INC. MCKENZIE CO. (NCT-1) #1	2135	6930	7123	193	0	5
639	153	95	8	SESE	AMERADA PETROL. CORP. G. L. THOMPSON #2	2413	7240	7433	193	0	0
343	153	95	8	SESW	THE TEXAS CO. GOV'T. DOROUGH #1	2381	7180	7387	207	0	0
11103	153	95	8	SESW	TEXACO, INC. TEXACO-HUNT SILURIAN 33-1	2394	7190	7407	217	0	6
11897	153	95	8	SWNW	TEXACO, INC. SILURIAN UNIT 50-1	2307	7123	7295	172	0	0
10498	153	95	8	SWSE	AMERADA HESS CORP. I. THOMPSON #8-34	2416	7240	7438	198	0	5
1176	153	95	9	SENW	HUNT OIL CO. JOHN ISSACCSON #4	2122	6888	7160	272	0	0
833	153	95	9	SESW	HUNT OIL CO. ISAACSON NO 3	2400	7233	7445	212	0	0
12031	153	95	9	SWNW	TEXACO, INC. SILURIAN UNIT 54-1	2231	7020	7255	235	0	12
11948	153	95	9	SWSW	PROSPER ENERGY CORP. PROSPER-ISAACSON 1	2383	7215	7416	201	0	0
7067	153	95	10	NENE	TEXACO, INC. SILURIAN UNIT 9 #1	2327	7160	7394	234	0	0
7979	153	95	10	NESE	TEXACO, INC. SILURIAN UNIT 14 #1	2411	7235	7482	247	0	0
10459	153	95	10	NESW	TEXACO, INC. SILURIAN UNIT 18 #1	2412	7230	7484	254	0	0
1402	153	95	10	NWNW	TEXACO, INC. GOV'T. UNIT #1	2335	7133	7373	240	0	0
7073	153	95	10	NWNW	TEXACO, INC. SILURIAN UNIT 10 #1	2323	7114	7357	243	0	0
1515	153	95	10	NWSW	TEXACO, INC. S. HOLMAN #1	2337	7133	7406	273	0	0
1608	153	95	10	SENE	TEXACO, INC. GOV'T. DOROUGH (NCT-1) "C" #10	2342	7160	7402	242	0	0
1455	153	95	10	SENW	TEXACO, INC. GOV'T. DOROUGH "C" (NCT-1) #8	2342	7093	7340	247	0	0
2625	153	95	11	NWNW	TEXACO, INC. GOV'T. DOROUGH U 3 #1	2290	7130	7372	242	0	6
10448	153	95	11	NWSW	TEXACO, INC. SILURIAN UNIT 19 #1	2358	7190	7450	260	0	0
11617	153	95	13	SESW	EDWIN L. COX & BERRY R. COX HAGEN 1-13	2242	7305	7555	250	0	0
10548	153	95	14	NWNE	TEXACO, INC. SILURIAN UNIT #28-1	2225	7173	7410	237	0	0
11001	153	95	14	NWNW	TEXACO, INC. SILURIAN UNIT 26-1	2293	7160	7402	242	0	20
1496	153	95	14	SESE	TEXACO, INC. C. SIGURDSON #1	2341	7245	7453	208	0	30

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
8932	153	95	15	NWSW	TEXAS INTERNATIONAL PETROL. CO. TIPCO #1-15	2392	7280	7478	198	0	0
78	153	95	16	NENW	AMERADA PETROL. CORP. NORTH DAKOTA "D" #1	2459	7315	7535	220	0	0
12022	153	95	16	NENW	TEXACO, INC. SILURIAN UNIT 53-1	2470	7323	7540	217	0	10
11895	153	95	16	NWNE	AMERADA HESS CORP. STATE 16-31	2466	7305	7533	228	0	6
11853	153	95	16	NWSE	AMERADA HESS CORP. STATE 16-33	2360	7240	7447	207	0	8
774	153	95	16	SESW	AMERADA PETROL. CORP. ND-D #2	2355	7234	7435	201	0	0
11367	153	95	16	SWNW	AMERADA HESS CORP. STATE 16-12	2434	7285	7488	203	0	0
283	153	95	16	SWSE	AMERADA PETROL. CORP. & PACIFIC WESTERN OIL ARNER JELLESED #1	2356	7240	7440	200	0	0
10965	153	95	16	SWSW	AMERADA HESS CORP. STATE 16-14	2349	7193	7418	225	0	0
492	153	95	17	NWNE	AMERADA PETROL. CORP. G. L. THOMPSON #1	2406	7235	7440	205	0	0
521	153	95	17	NWNW	TEXACO, INC. M. L. SLAATTEN #1	2370	7115	7387	272	0	8
10426	153	95	17	SESW	TEXACO, INC. SILURIAN UNIT 22 #1	2333	7130	7385	255	0	0
10499	153	95	17	SWNE	AMERADA HESS CORP. I. THOMPSON #17-31	2393	7200	7432	232	0	0
10728	153	95	17	SWNW	TEXACO, INC. SILURIAN UNIT #25-1	2326	7083	7355	272	0	6
10224	153	95	17	SWSE	TEXACO, INC. SILURIAN UNIT #20-1X	2343	7130	7400	270	0	0
11194	153	95	18	NENW	TEXACO, INC. SILURIAN UNIT 37-1	2249	7018	7290	272	0	8
551	153	95	18	NWNE	TEXACO, INC. GOV'T. DOROUGH "B" (NCT-1) #1	2289	7040	7312	272	0	0
11017	153	95	18	SENE	TEXACO, INC. SILURIAN UNIT 27 1X	2296	7063	7325	262	0	4
10367	153	95	18	SESE	TEXACO, INC. SILURIAN UNIT 21 #1	2327	7117	7388	271	0	6
10438	153	95	18	SESW	TEXACO, INC. SILURIAN UNIT 23 #1	2341	7130	7400	270	0	5
10860	153	95	19	SENW	UNIVERSAL RES. CORP. GLADYS 2-19	2270	7075	7342	267	0	16
5055	153	95	19	SESE	UNIVERSAL RES. CORP. SULLIVAN #1	2268	7090	7367	277	0	0
10405	153	95	19	SESE	UNIVERSAL RES. CORP. SULLIVAN #4-19	2273	7095	7372	277	0	0
10297	153	95	20	NWNE	UNIVERSAL RES. CORP. ALMA #1-20	2388	7198	7468	270	0	5
10113	153	95	20	NWSE	UNIVERSAL RES. CORP. NORBY STATE #1-20	2370	7213	7493	280	0	6
1084	153	95	20	NWSW	AMERADA PETROL. CORP. HENRY NORBY #1	2336	7162	7430	268	0	8
9912	153	95	20	SENW	UNIVERSAL RES. CORP. WILSON #1-20	2405	7225	7495	270	0	6
546	153	95	21	NENW	TEXACO, INC. OLE KLEUMOEN #1	2350	7210	7442	232	0	0
11064	153	95	21	NESE	TEXACO, INC. SILURIAN UNIT 34-1	2356	7243	7478	235	0	0
877	153	95	21	NWNE	AMERADA PETROL. CORP. ARNEL JELLESED "A" #1	2350	7250	7443	193	0	0
12148	153	95	21	NWNE	TEXACO, INC. SILURIAN UNIT 59 #1	2354	7260	7460	200	0	0
10802	153	95	21	NWNW	TEXACO, INC. SILURIAN UNIT 30 1	2365	7195	7460	265	0	0
2313	153	95	21	NWSE	THE TEXAS CO. H. O. THOMPSON #2	2374	7227	7478	251	0	4
10991	153	95	21	NWSW	AMERADA HESS CORP. A. E. WILSON 21-14	2387	7225	7483	258	0	6

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
2443	153	95	21	SESE	AMERADA PETROL. CORP. C. D. WILSON #1	2374	7235	7500	265	0	0
1802	153	95	22	NWSE	TEXACO, INC. P. THORLACKSON #1	2359	7305	7500	195	0	0
9039	153	95	22	NWSE	TEXACO, INC. THORLACKSON NCT-1 #3	2367	7323	7512	189	0	0
2636	153	95	22	NWSW	THE TEXAS CO. P. GILBERTSON "B" #1	2366	7280	7480	200	0	0
6137	153	95	22	SENE	TIGER OIL CO. B. J. WESTDAL #42-22	2359	7295	7492	197	0	0
6178	153	95	22	SESE	TEXACO, INC. P. S. THORLACKSON NCT-1 #2	2377	7350	7540	190	0	0
1749	153	95	22	SESW	TEXACO, INC. P. GILBERTSON #1	2373	7300	7507	207	0	0
6479	153	95	22	SESW	TEXACO, INC. SILURIAN UNIT 2 #1	2379	7300	7507	207	0	0
6433	153	95	23	NWSE	TIGER OIL CO. SIGUARDSON TRUST #34-23	2344	7388	7573	185	0	42
3804	153	95	23	NWSW	CALVERT DRILLING CO. RALPH SLAATEN #1	2344	7335	7527	192	0	0
6488	153	95	23	SENE	TIGER OIL CO. SIGUARDSON TRUST #42-23	2311	7335	7527	192	0	17
6112	153	95	23	SENW	TIGER OIL CO. W. J. DINWOODIE #22-23	2378	7372	7560	188	0	0
10918	153	95	23	SENW	TEXACO, INC. W. J. DINWOODIE 1	2379	7360	7560	200	0	0
6175	153	95	23	SWNW	TIGER OIL CO. DINWOODIE #12-23	2369	7340	7542	202	0	0
6495	153	95	24	SWNE	TIGER OIL CO. CARL FROHOLM #32-24	2199	7290	7500	210	0	0
6107	153	95	25	NWNW	TIGER OIL CO. SIGUARDSON TRUST #1-25	2298	7355	7563	208	0	0
397	153	95	25	SESE	AMERADA PETROL. CORP. CORA MCKEEN #1	2315	7410	7650	240	0	0
6213	153	95	26	NENW	TIGER OIL CO. & TEXACO P. S. THORLACKSON #21-26	2344	7360	7551	191	0	45
11553	153	95	26	NENW	GREAT PLAINS PETROL., INC. THORLACKSON 26-3	2349	7370	7561	191	0	40
11429	153	95	26	NWNE	GREAT PLAINS PETROL., INC. SLAATEN 26-1	2314	7367	7550	183	0	0
6558	153	95	26	NWNW	TIGER OIL CO. P. S. THORLACKSON #11-26	2363	7362	7552	190	0	0
6437	153	95	26	NWSW	HOME PETROL. CORP. MARIE SHERVEN #1	2344	7360	7550	190	0	30
11802	153	95	27	C NE	GREAT PLAINS PETR., INC. JULIAN A. HAUGEN ET AL 27-2	2360	7330	7510	180	0	5
6592	153	95	27	NESW	GETTY OIL CO. JENS ROBERTSON #11-27	2327	7235	7460	225	0	0
1951	153	95	27	NWNE	HUNT OIL CO. O. HAUGEN (NCT-2) #1	2378	7335	7523	188	0	0
6207	153	95	27	NWNE	PROSPER ENERGY CORP. HAUGEN #1	2375	7338	7525	187	0	0
2259	153	95	27	NWSE	CALVERT-HUNT-KING-STEVENSON-INTERNATIONAL-WESTERN H. SHERVEN 1	2343	7307	7500	193	0	0
6514	153	95	27	NWSE	PROSPER ENERGY CORP. SHERVEN #27-1	2350	7300	7500	200	0	0
2421	153	95	27	SENW	TEXACO, INC. NYGAARD-P GILBERSON #1	2341	7260	7487	227	0	0
6366	153	95	27	SENW	TEXACO, INC. SILURIAN UNIT #2	2346	7238	7484	246	0	0
2394	153	95	27	SESW	SKELLY OIL CO. JENS ROBERTSON #1	2317	7280	7482	202	0	0
10771	153	95	27	SWSE	AMERADA HESS CORP. SHERVEN 27-33	2331	7302	7482	180	0	6
6793	153	95	28	NESE	GETTY OIL CO. E. O. & G. #28-9	2327	7210	7470	260	0	5
1101	153	95	28	SESE	AMERADA PETROL. CORP. S. K. BREISETH #1	2291	7235	7438	203	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10315	153	95	29	NWNE	UNIVERSAL RES. CORP. ERNEST #1-29	2303	7163	7430	267	0	16
5062	153	95	29	NWNW	UNIVERSAL RES. CORP. SULLIVAN #2	2300	7135	7417	282	0	0
10112	153	95	29	NWNW	UNIVERSAL RES. CORP. SULLIVAN #3-29	2306	7150	7433	283	0	0
10404	153	95	29	NWSE	UNIVERSAL RES. CORP. OLSON #1-29	2242	7120	7383	263	0	0
5091	153	95	29	NWSW	UNIVERSAL RES. CORP. KNIGHT #1	2259	7105	7380	275	0	5
10218	153	95	29	NWSW	UNIVERSAL RES. CORP. KNIGHT UNIT #2-29	2261	7105	7380	275	0	7
12168	153	95	30	NENW	TEXACO, INC. SILURIAN UNIT 58 #1	2178	6990	7255	265	0	20
12289	153	95	30	NESW	TEXACO, INC. SILURIAN UNIT 61 #1	2277	7110	7380	270	0	15
8591	153	95	30	SENE	UNIVERSAL RES. CORP. TED UNIT #1	2268	7115	7392	277	0	5
9318	153	95	30	SENE	UNIVERSAL RES. CORP. T. K. #1	2286	7115	7392	277	0	6
6076	153	95	30	SENW	HUNT OIL CO. KNIGHT #1-30	2267	7100	7365	265	0	20
4986	153	95	30	SESE	UNIVERSAL RES. CORP. HELLEN E. FELLAND #1	2280	7098	7373	275	0	10
1152	153	95	30	SESW	AMERADA PETROL. CORP. HOLLER FELLAND T-1 #1	2280	7108	7380	272	0	4
5044	153	95	31	NWSE	TEXACO, INC. W. QUALE #2	2338	7175	7442	267	0	0
5010	153	95	31	SENE	UNIVERSAL RES. CORP. QUALE #1	2311	7140	7407	267	0	10
4361	153	95	31	SENW	CALVERT DRILLING & PRODUCING CO.-WOLF EXPLOR. CO. QUALE #1	2298	7143	7407	264	0	0
3167	153	95	31	SESW	TEXACO, INC. W. QUALE #1	2293	7134	7400	266	0	4
7561	153	95	31	SWSE	TEXACO, INC. QUALE #3X	2325	7178	7445	267	0	0
4945	153	95	32	NWNW	UNIVERSAL RES. CORP. THOMPSON #1	2273	7100	7375	275	0	15
8096	153	95	32	NWNW	UNIVERSAL RES. CORP. THOMPSON #1-A	2268	7104	7380	276	0	6
10697	153	95	32	NWNW	SAGE ENERGY CO. THOMPSON #11-32	2284	7115	7387	272	0	5
5036	153	95	32	NWSW	UNIVERSAL RES. CORP. ANDERSON #1	2293	7173	7437	264	0	5
919	153	95	33	NWSW	AMERADA PETROL. CORP. SWENSON UNIT #1	2370	7272	7515	243	0	0
6547	153	95	34	NESW	HANSON OIL CORP. SUGAR BUTTE #2	2288	7250	7447	197	0	6
6539	153	95	34	NWNE	HANSON OIL CORP. SUGAR BUTTE #1	2295	7285	7480	195	0	25
1041	153	95	34	NWNW	AMERADA PETROL. CORP. T. R. SWENSON #1	2277	7235	7435	200	0	10
1115	153	95	34	NWSW	AMERADA PETROL. CORP. LARS RAMUSSEN #1	2276	7235	7450	215	0	30
1131	153	95	35	SESW	AMERADA PETROL. CORP. JAMES WASHBURN #1	2338	7400	7627	227	0	0
6617	153	95	36	NESE	ENERGETICS, INC. STATE #43-36	2379	7493	7722	229	0	10
4494	153	96	10	SESE	GULFLAND, INC. MOGEN #1	2097	6890	7168	278	0	7
1679	153	96	10	SWSE	AMERADA PETROL. CORP. C. C. MOGEN T-1 #1	2017	6832	7102	270	0	0
11874	153	96	10	SWSE	TEXACO, INC. E. A. CHAPMAN "A" 1	2036	6865	7135	270	0	0
1773	153	96	12	SENE	TEXACO, INC. B. BOOTS #1	2326	7096	7372	276	0	0
11687	153	96	12	SESE	TEXACO, INC. SILURIAN UNIT 40-1	2236	7038	7325	287	0	6

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
12026	153	96	13	NENW	PROSPER ENERGY CORP. PROSPER SILURIAN 1-13	2159	6976	7250	274	0	7
11785	153	96	13	NESE	TEXACO, INC. SILURIAN UNIT 49-1	2254	7066	7340	274	0	5
1026	153	96	13	SENE	AMERADA PETROL. CORP. H. O. THOMPSON #1	2200	7005	7275	270	0	5
11647	153	96	13	SENE	TEXACO, INC. SILURIAN UNIT 44-1	2197	7006	7275	269	0	5
8138	153	96	15	SENW	HOME PETROL. CORP. FEDERAL #15-1	2072	6932	7190	258	0	0
12082	153	96	24	E2SE	TEXACO, INC. SILURIAN UNIT 55 #1	2123	6953	7222	269	0	6
11160	153	96	24	SENE	TEXACO, INC. SILURIAN UNIT 36-1	2212	7028	7290	262	0	7
12192	153	96	25	NENE	TEXACO, INC. SILURIAN UNIT 57 #1	2266	7105	7378	273	0	32
12268	153	96	25	SESE	TEXACO, INC. SILURIAN UNIT 63 #1	2329	7194	7466	272	0	5
2746	153	97	8	NESE	WILLIAM HERBERT HUNT ANNA M. HOLT #1	2110	7920	8167	247	0	12
7233	153	97	16	NWSW	GETTY OIL CO. TOBACCO GARDEN #16-12	2052	7905	8145	240	0	10
10389	153	97	25	SWSW	GULF OIL CORP. WEST NESSON FEDERAL #1-25-4D	2234	7628	7865	237	0	5
9467	153	97	29	SESW	DONALD C. SLAWSON BRODERSON #29-1	2059	7887	8127	240	0	0
7470	153	99	1	NESE	NORTHWEST EXPLOR. CO. LONG CREEK #2	2342	8152	8402	250	0	0
8998	153	99	1	NWNE	EVERETT DRILLING VENTURES, INC. LONG CREEK #4	2308	8116	8357	241	0	0
11455	153	99	4	NENW	LOUISIANA LAND & EXPLOR. CO. BROGGER 21-4 1	2374	8233	8475	242	0	0
8441	153	100	1	NENE	MAPCO PROD. CO. TOFTE #1-1	2313	8150	8384	234	0	3
10945	153	100	2	NESW	GETTY OIL CO. STOKKE 2-11	2213	8053	8267	214	0	4
11057	153	100	2	SWNE	GETTY OIL CO. SKURDAL 2-7	2250	8090	8312	222	0	4
10722	153	100	2	SWNW	GETTY OIL CO. HARRIS #2-5	2201	8000	8218	218	0	0
12051	153	100	3	NESE	WYOMING RES. CORP. LAST CHANCE 1-3	2130	7917	8134	217	0	0
10429	153	100	4	NWNE	LOUISIANA LAND & EXPLOR. CO. NELSON 31-4 #1	1945	7660	7890	230	0	0
11453	153	100	11	SESE	HNG OIL CO. STANGELAND 11 1	2026	8012	8248	236	0	0
8910	153	100	13	NWNW	TEXACO, INC. T. P. SLETTE NCT #1	2128	7900	8134	234	0	3
11449	153	100	14	NESW	LOUISIANA LAND & EXPLOR. CO. KJORSTAD 23-14 1	2160	7916	8136	220	0	0
9785	153	100	14	SENE	TEXACO, INC. SLETTE-STANGELAND NCT-1 #2	2198	7960	8185	225	0	0
11439	153	100	22	SENW	LOUISIANA LAND & EXPLOR. CO. STOKKE 22-22 1	2089	7850	8080	230	0	0
11745	153	101	2	SWSW	NANCE PETROL. CORP. HEEN 15-3	1872	7557	7775	218	0	5
11751	153	101	2	SWSW	BASIC EARTH SCIENCE SYSTEMS, INC. BASIC GAME & FISH #14-2	1871	7500	7718	218	0	0
12129	153	101	3	SESW	JOHN L. COX FRENCH-PINNEY #24-3	1871	7510	7723	213	0	3
10710	153	101	9	NWSE	GULF OIL CORP. NOVAK #1-9-3A	1872	7534	7748	214	0	3
11920	153	101	10	NWNE	BASIC EARTH SCIENCE SYSTEMS, INC. BASIC CORPS OF ENGINEERS #31-10	1872	7540	7760	220	0	5

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10140	153	101	11	NWSW	TOM BROWN, INC. PALMER #11-13	2055	7770	7980	210	0	5
11549	153	101	11	SENW	BASIC EARTH SCIENCE SYSTEMS, INC. ROSEBUD 22-11	1872	7534	7748	214	0	5
9309	153	101	11	SESE	GULF OIL CORP. N. ALEXANDER #1-11-3C	2105	7823	8025	202	0	5
9450	153	101	12	SESW	GULF OIL CORP. SCHMITZ #1-12-4C	2104	7830	8037	207	0	4
11031	153	101	17	SESW	GULF OIL CORP. NOE 1-17-3D	1870	7515	7697	182	0	0
11238	153	101	19	SWNW	TENNECO OIL CO. COULTER USA 1-19	1879	7515	7698	183	0	5
10431	153	101	20	SESW	COLUMBIA GAS DEVELOP. CORP. DEER PASS #20-1	1879	7525	7707	182	0	7
10910	153	101	20	SESW	COLUMBIA GAS DEVELOP. CORP. DEER PASS 20-2	1880	7512	7700	188	0	7
11470	153	101	20	SESW	COLUMBIA GAS DEVELOP. CORP. DEER PASS 20-3	1880	7513	7700	187	0	5
11485	153	101	20	SWNW	COLUMBIA GAS DEVELOP. CORP. FEDERAL-WEGLEY 20-1	1875	7500	7680	180	0	4
11844	153	101	20	SWSW	TENNECO OIL CO. STATE 3-19	1874	7550	7750	200	0	6
11845	153	101	20	SWSW	TENNECO OIL CO. STATE 1-19	1875	7540	7737	197	0	5
10197	153	101	21	SWSW	COLUMBIA GAS DEVELOP. CORP. REHAB #21-1	1976	7624	7814	190	0	7
11963	153	101	23	NWNW	LOUISIANA LAND & EXPLOR. CO. FLB MORRIS 11-23 1	2144	7840	8042	202	0	6
7795	153	101	23	SWSE	MOSBACHER PRUET OIL CO. EDWIN M. DAHL #23-1	2035	7710	7917	207	0	0
6616	153	101	26	NENW	MOSBACHER PRUET OIL CO. FLB #1-26	2100	7718	7935	217	0	0
7248	153	101	26	NWSE	MOSBACHER PRUET OIL CO. VERLIN FOSSUM ET AL #26-1	2175	7820	8033	213	0	0
7651	153	101	27	SENE	MOSBACHER PRUET OIL CO. HERMAN SCHMITZ #27-1	2056	7748	7940	192	0	0
10169	153	101	28	NWSW	COLUMBIA GAS DEVELOP. CORP. ELK #28-1	2091	7740	7930	190	0	7
10792	153	101	28	NWSW	COLUMBIA GAS DEVELOP. CORP. ELK 28-2	2095	7750	7938	188	0	8
9959	153	101	28	SWNE	COLUMBIA GAS DEVELOP. CORP. G. KELTER ET AL #28-1	2154	7813	8002	189	0	7
10809	153	101	28	SWNW	COLUMBIA GAS DEVELOP. CORP. REHAB 28-1	1997	7643	7838	195	0	6
11430	153	101	28	SWNW	COLUMBIA GAS DEVELOP. CORP. REHAB 28-2	1987	7637	7830	193	0	8
11475	153	101	28	SWSE	COLUMBIA GAS DEVELOP. CORP. ELK 28-3	2125	7777	7965	188	0	8
10903	153	101	29	NENW	COLUMBIA GAS DEVELOP. CORP. JEPSON 29-1	2062	7710	7900	190	0	7
11037	153	101	29	NESW	COLUMBIA GAS DEVELOP. CORP. JEPSON 29-2	2093	7740	7922	182	0	6
10116	153	101	29	NWNE	COLUMBIA GAS DEVELOP. CORP. NOR-CORP #29-1	2045	7703	7900	197	0	5
10248	153	101	29	NWNE	COLUMBIA GAS DEVELOP. CORP. NOR-CORP #29-2	2041	7697	7890	193	0	6
10335	153	101	29	NWSE	COTTON PETROL. CORP. EDNA DEVITT #1-29	2100	7750	7930	180	0	0
10338	153	101	29	NWSE	COTTON PETROL. CORP. EDNA DEVITT #2-29	2096	7740	7928	188	0	0
11474	153	101	30	NESE	COLUMBIA GAS DEVELOP. CORP. FEDERAL-IVERSON 30-2	2030	7660	7850	190	0	0
11473	153	101	30	NWSW	COLUMBIA GAS DEVELOP. CORP. FEDERAL-IVERSON 30-1	1908	7620	7808	188	0	0
10407	153	101	30	SENE	COLUMBIA GAS DEVELOP. CORP. PAGE #30-1	1941	7590	7772	182	0	7
11524	153	101	30	SENW	COTTON PETROL. CORP. JOHNSON 1-30	1879	7530	7712	182	0	5
11021	153	101	30	SESW	COTTON PETROL. CORP. WANG 1-30	1939	7598	7780	182	0	4

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10832	153	101	31	NWNW	COTTON PETROL. CORP. JM 1-31	1966	7635	7810	175	0	0
10468	153	101	31	SESE	COTTON PETROL. CORP. WANG #1-31	2130	7813	7998	185	0	6
8876	153	101	31	SESW	MOSBACHER PROD. CO. JOHNSTON ET AL #1	2085	7773	7950	177	0	0
10737	153	101	31	SESW	COTTON PETROL. CORP. JOHNSON #1-31	2102	7790	7965	175	0	0
10736	153	101	32	NENE	COTTON PETROL. CORP. EDNA DEVITT #1-32	2007	7670	7855	185	0	6
11140	153	101	32	NENE	COTTON PETROL. CORP. EDNA DEVITT 2-32	2002	7670	7857	187	0	7
10966	153	101	32	NENW	COLUMBIA GAS DEVELOP. CORP. FEDERAL 32-1	2144	7810	7985	175	0	6
11261	153	101	32	NWSE	COTTON PETROL. CORP. NELSEN 2-32	2162	7830	8025	195	0	7
11034	153	101	32	NWSW	COTTON PETROL. CORP. NELSEN 1-32	2170	7860	8040	180	0	7
10939	153	101	33	N2NW	COLUMBIA GAS DEVELOP. CORP. REHAB 33-1	2050	7715	7900	185	0	9
11523	153	101	33	NESW	SUPERIOR OIL CO. POWERS 33-23	2164	7850	8040	190	0	7
11492	153	101	33	NWNE	TEXACO, INC. CANTERRA STATE OF N. D. "F" 1	2146	7800	7995	195	0	7
11345	153	101	33	NWSE	SUPERIOR OIL CO. FREDRICKSON #33-33	2156	7837	8017	180	0	5
10788	153	101	34	SESW	SUPERIOR OIL CO. FOSSUM 34-24	2160	7857	8047	190	0	8
10854	153	101	34	SWNE	SUPERIOR OIL CO. MARCUS 34-32	2125	7815	8005	190	0	8
11575	153	101	34	SWNW	TEXACO, INC. CANTERRA STATE OF N. D. "F" 2	2134	7815	8000	185	0	8
10645	153	101	34	SWSE	SUPERIOR OIL CO. GREENGARD #34-2	2194	7880	8078	198	0	8
6996	153	101	34	SWSW	NORTHWEST EXPLOR. CO. GREENGARD #1	2157	7830	8025	195	0	8
8882	153	101	35	SESE	TEXAS GAS EXPLOR. CORP. LINDVIG 1-35	2226	7907	8112	205	0	0
10855	153	101	35	SWSW	SUPERIOR OIL CO. FOSSUM 35-15	2165	7843	8042	199	0	0
11602	153	102	2	NESW	HARPER OIL CO. HANSEN 11-2	2084	7670	7884	214	0	9
11420	153	102	2	NWNW	HARPER OIL CO. HANSEN 4-2	2125	7727	7932	205	0	8
11890	153	102	2	SWNE	HARPER OIL CO. TANG 7-2	2113	7717	7925	208	0	9
11545	153	102	3	NENE	HARPER OIL CO. HANSEN 1-3	2132	7725	7940	215	0	0
11166	153	102	4	SWNW	SUN EXPLOR. & PROD. CO. F. T. MARTIN 1	2135	7740	7953	213	0	6
11578	153	102	13	NWSE	LOUISIANA LAND & EXPLOR. CO. HABERMEYER 33-13 1	1872	7500	7700	200	0	9
11328	153	102	13	SWSW	COLUMBIA GAS DEVELOP. CORP. SOVIG 13-1	1873	7492	7700	208	0	5
11219	153	102	14	SESE	SUN EXPLOR. & PROD. CO. PATCH FEDERAL 1	1876	7490	7692	202	0	6
11721	153	102	15	SWNW	EDWIN L. COX & BERRY R. COX MARTIN-FEDERAL 15-1	1872	7450	7665	215	0	6
10334	153	102	16	SESE	MOSBACHER PROD. CO. GALAXY #16-1	1879	7448	7660	212	0	5
9241	153	102	21	NWNE	MOSBACHER PRUET OIL CO. CHARLES BOWEN #21-1	1887	7447	7650	203	0	5
8442	153	102	22	NENW	MOSBACHER PRUET OIL CO. JAMES F. MARTIN #1	1879	7450	7660	210	0	6
11459	153	102	23	S2NE	SUN EXPLOR. & PROD. CO. TOFTE FEDERAL 1	1878	7498	7690	192	0	8
11696	153	102	23	SESE	SUN EXPLOR. & PROD. CO. LOHSE FEDERAL 1	1870	7508	7697	189	0	6
11252	153	102	24	E2SE	TENNECO OIL CO. METZGER USA 1-19	1881	7615	7804	189	0	7

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10681	153	102	24	NENW	GULF OIL CORP. SKURDAL #2-24-1B	1874	7506	7697	191	0	7
9342	153	102	24	NESE	GULF OIL CORP. SKURDAL 1-24-3B	1872	7525	7700	175	0	7
11136	153	102	24	NESE	GULF OIL CORP. SKURDAL 3-24-3B	1882	7520	7707	187	0	7
11137	153	102	24	NWSW	GULF OIL CORP. PEDERSON 5-24-4C	1877	7490	7687	197	0	0
11679	153	102	24	SESW	TENNECO OIL CO. SCHMIDT 2-25	1880	7577	7775	198	0	6
11135	153	102	24	SWNE	GULF OIL CORP. SKURDAL 4-24-2D	1876	7500	7690	190	0	8
11678	153	102	25	NWNE	TENNECO OIL CO. ERICKSON 4-25	1882	7517	7705	188	0	0
10758	153	102	31	SESW	SUN EXPLOR. & PROD. CO. JOHNSRUD "A" 1	1880	7490	7675	185	0	5
11122	153	102	36	NESE	SUPERIOR OIL CO. STATE OF N. D. 36-43	2000	7688	7862	174	0	6
12025	153	102	36	NESW	SONAT EXPLOR. CO. STATE 2-36	1929	7635	7807	172	0	5
11990	153	102	36	SWSE	SONAT EXPLOR. CO. STATE 1-36	2094	7790	7963	173	0	7
12015	153	103	10	NESW	RAYMOND T. DUNCAN IRWIN 1	2157	7700	7910	210	0	6
9820	153	103	10	SESE	EXXON CORP. F. MANSON #1	2118	7640	7850	210	0	5
9003	153	103	14	NESW	EXXON CORP. IRWIN #1	1976	7535	7747	212	0	7
7926	153	103	19	NENE	GULF OIL CORP. GORDER #1-19-2B	2295	7836	8030	194	0	7
10393	153	103	26	SESW	EXXON CORP. R. E. BEARCE ET AL #1	2276	7865	8051	186	0	8
7602	153	103	31	NWSE	GULF OIL CORP. SEEL #1-31-3A	2222	7780	7964	184	0	0
9076	153	103	31	NWSW	MOSBACHER PROD. CO. JACOB SEEL #31-1	2082	7620	7805	185	0	6
8742	153	103	31	SWNW	MOSBACHER PROD. CO. WAYNE DENOWH #31-1	2235	7767	7950	183	0	0
8922	153	103	32	NESE	MOSBACHER PRUET OIL CO. OTTO SEEL #32-1	2189	7743	7930	187	0	5
8550	153	103	34	NWNE	APACHE CORP. GIBBINS #34-1	2007	7592	7773	181	0	7
9738	153	103	36	SESE	SUN EXPLOR. & PROD. CO. AUNE #1-36	1887	7475	7660	185	0	6
12352	153	103	36	SESW	MARSHALL & WINSTON, INC. TRENTON STATE #1	1898	7490	7672	182	0	5
7985	153	104	12	NWSE	TRAVERSE CORP. STIEHL #1-12	2307	7820	8038	218	0	6
7632	153	104	25	SWNW	GULF OIL CORP. NORDELL #1-25-1D	2172	7700	7892	192	0	8
7830	153	104	27	SESE	GULF OIL CORP. KERMIT HEEN 1-27-3C	2173	7692	7880	188	0	0
7503	153	104	36	SESE	GULF OIL CORP. MARLEY STATE #1-36-3C	2183	7727	7915	188	0	5
4987	154	85	18	SENW	DEPCO, INC. & TEXAS PACIFIC OIL CO. STEVICK #1	2203	0	0	0	0	0
8691	154	85	34	NWSW	INEXCO OIL CO. OPLAND #1-34	2152	0	0	0	0	0
5154	154	86	12	NESW	CARDINAL & KENNETH LUFF BEN M. RUDE #1-12	2195	0	0	0	0	0
4223	154	86	22	SWSW	PEL-TEX, INC. & CONOCO KALANZE #1	2121	5712	5752	40	0	0
5207	154	86	35	SESE	OIL RES. RUBBELKE #1	2148	5705	5740	35	0	0
12266	154	87	11	SWSW	UNION TEXAS PETROL. CORP. NESTE FRUNZ #11-1	2145	5935	6000	65	0	0
7238	154	88	5	NWNE	UNION OIL CO. OF CALIFORNIA OYNES #1-B5	2132	6168	6327	159	0	3
7918	154	89	29	SESW	MARATHON OIL CO. KULLAND #29-24	2162	6640	6807	167	0	10

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
10850	154	90	3	NESW	UNION TEXAS PETROL. CORP. JOHNSON STATE 3-1	2272	6810	7020	210	0	10
10692	154	90	9	SWNE	SOLAR PETROL., INC. HOSETH #1	2321	6950	7120	170	10	10
11343	154	90	11	NENW	UNION TEXAS PETROL. CORP. MOEN #11-1	2222	6720	6880	160	0	0
8069	154	90	12	SESE	MARATHON OIL CO. JENSEN #12-44	2213	6695	6820	125	0	0
6526	154	90	17	NESE	BWAB, INC. HOSETH #17-43	2368	7045	7200	155	0	26
7414	154	90	22	SENW	SOUTH RANCH OIL CO. KARBOWSKI #1	2235	6892	7030	138	0	0
6695	154	91	5	NENW	DONALD C. SLAWSON HILL ET AL #5-1	2305	7222	7422	200	0	5
2816	154	92	12	SWSE	DAVIS OIL CO. LEN CARKUFF #1	2389	7397	7583	186	12	8
7115	154	95	1	NESE	KISSINGER PETROL. CORP. MARMON #9-1	2124	7325	7580	255	0	0
4297	154	95	2	SWNW	PAN AMERICAN PETROL. CORP. B. E. HOVE #1	1975	6885	7160	275	0	0
4340	154	95	2	SWSW	PAN AMERICAN PETROL. CORP. CLIFFORD MARMON #1	1972	6870	7142	272	0	0
4936	154	95	3	SENE	INTERNATIONAL ENERGY CO. HOVE-MCCARROLL #1	2051	6892	7152	260	0	8
6098	154	95	3	SENE	TIGER OIL CO. HOVE #42-3	2022	6885	7148	263	0	8
1147	154	95	4	NWSE	AMERADA PETROL. CORP. A. T. BERG #1	2119	6807	7078	271	0	0
1407	154	95	4	SENW	AMERADA PETROL. CORP. MABEL SLETTEN #1	2060	6732	7010	278	0	0
922	154	95	4	SESW	AMERADA PETROL. CORP. D. T. DANIELSON #1	2146	6810	7080	270	0	0
858	154	95	5	NWNE	AMERADA PETROL. CORP. E. WOLFF ESTATE #1	2024	6665	6950	285	0	0
1414	154	95	5	NWNW	AMERADA PETROL. CORP. IRA KNOX 3	1960	6625	6898	273	0	0
1261	154	95	5	SENE	AMERADA PETROL. CORP. HU-2	2069	6717	6985	268	20	20
1100	154	95	5	SESE	AMERADA PETROL. CORP. O. A. JOHNSON #1	2130	6790	7063	273	0	0
8981	154	95	6	SENW	RANGER OIL CO. LARMER #6-6	1976	6637	6895	258	0	7
1190	154	95	6	SESE	AMERADA PETROL. CORP. H. STOCKMAN #1	2057	6735	7012	277	0	0
1297	154	95	6	SESW	AMERADA PETROL. CORP. F. L. KAHLERT #2	2040	6695	6970	275	0	0
1135	154	95	7	NWNE	AMERADA PETROL. CORP. RONALD GORDON #1	2078	6745	7017	272	0	12
1192	154	95	7	NWNW	AMERADA PETROL. CORP. A. M. FRUH CO., INC. #1	2115	6765	7042	277	0	0
1148	154	95	7	NWSW	AMERADA PETROL. CORP. U.S.A. CAPA #1	2239	6912	7182	270	0	0
1079	154	95	7	SENW	AMERADA PETROL. CORP. F. L. KAHLERT #1	2145	6803	7077	274	0	0
1221	154	95	8	NWNE	HUNT OIL CO. H. R. STOCKMAN #1	2146	6875	7145	270	0	5
732	154	95	8	SESE	AMERADA PETROL. CORP. CONRAD KOLBERG #1	2252	6980	7262	282	0	0
6941	154	95	9	NENW	AMERADA HESS CORP. HOVE #2-9	2212	6880	7155	275	0	6
951	154	95	9	NWNE	AMERADA PETROL. CORP. E. H. MENDENHALL "A"	2516	6893	7160	267	0	0
1125	154	95	9	NWNW	AMERADA PETROL. CORP. J. G. HOVE #2	2142	6820	7090	270	0	10
1216	154	95	9	NWSE	AMERADA PETROL. CORP. E. H. MENDENHALL #2	2239	6945	7220	275	60	60
888	154	95	9	SENW	AMERADA PETROL. CORP. J. G. HOUE #1	2242	6935	7210	275	0	8
1118	154	95	9	SESE	AMERADA PETROL. CORP. ALICE HANSON #1	2260	6993	7252	259	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
275	154	95	9	SESW	AMERADA PETROL. CORP. HU-12	2269	6983	7260	277	0	13
5968	154	95	9	SWSE	AMERADA HESS CORP. MENDENHALL UNIT #1	2266	6990	7250	260	0	0
7594	154	95	9	SWSE	AMERADA HESS CORP. MENDENHALL #2-9	2279	7008	7268	260	0	4
11760	154	95	10	SWNW	HANSON OPERATING CO., INC. GOLDEN BUTTE 1	2241	7010	7280	270	0	3
813	154	95	15	NWSW	AMERADA PETROL. CORP. F. O. GENTZ #1	2021	6760	7020	260	0	0
8458	154	95	15	NWSW	AMERADA HESS CORP. WILLIAMS COUNTY #1	2031	6775	7030	255	0	3
707	154	95	15	SENW	AMERADA PETROL. CORP. F. O. GENTZ #2	2178	6963	7212	249	0	0
536	154	95	15	SESW	AMERADA PETROL. CORP. U.S.A. WESTBERG #1 T 1	1949	6710	6970	260	0	35
1244	154	95	16	NWNE	AMERADA PETROL. CORP. N.D. "E" #4	2274	7005	7262	257	0	8
128	154	95	16	NWNW	AMERADA PETROL. CORP. N.D. "E" #1	2305	7033	7320	287	0	0
986	154	95	16	SENE	AMERADA PETROL. CORP. N.D. "E" #3	2272	7005	7272	267	0	0
637	154	95	16	SESE	AMERADA PETROL. CORP. N.D. "E" #2	1944	6660	6937	277	0	35
6687	154	95	16	SWNE	AMERADA HESS CORP. STATE "E" #32-16	2300	7030	7303	273	0	3
402	154	95	17	SENE	AMERADA PETROL. CORP. EDDIE SANDERSON #1	1994	6730	7020	290	0	0
6184	154	95	18	NWNE	PETRO LEWIS CORP. H. C. SMITH #4-18	2052	6735	7013	278	0	0
6068	154	95	18	NWSE	ASHLAND OIL, INC. ANNA MENDENHALL ET AL #2-18	1905	6595	6855	260	0	25
6131	154	95	18	SENE	ASHLAND EXPLOR., INC. H. C. SMITH ET AL #3-18	2005	6710	6977	267	0	40
5921	154	95	18	SESE	ASHLAND OIL, INC. ANNA MENDENHALL ET AL #1-18	1885	6575	6840	265	0	4
535	154	95	21	NWNE	AMERADA PETROL. CORP. J. G. VIALL T 1 #1	1906	6640	6920	280	0	50
633	154	95	21	NWNE	AMERADA PETROL. CORP. J. G. VIALL T 1 #2	1905	6840	7112	272	0	0
805	154	95	22	NWNE	AMERADA PETROL. CORP. MARMON HAGEN #1	1883	6705	6945	240	0	10
459	154	95	22	NWNW	AMERADA PETROL. CORP. M. W. ZOK UNIT #1	1893	6620	6880	260	0	0
1374	154	95	28	SENE	INVESTORS OIL, INC. U. S. A. #1	1803	6575	6825	250	0	4
1226	154	95	31	NWSE	AMERADA PETROL. CORP. E. D. PETERSON C #1	1864	6635	6883	248	0	0
1097	154	95	31	SESE	AMERADA PETROL. CORP. U.S.A. PETERSON U. #1	1901	6650	6900	250	0	0
1196	154	95	31	SESW	AMERADA PETROL. CORP. E. O. PETERSON "B" #1	1919	6708	6942	234	0	0
1121	154	95	32	NWSE	AMERADA PETROL. CORP. BERT BOOTS #1	1858	6630	6890	260	0	10
1094	154	95	32	NWSW	AMERADA PETROL. CORP. E. D. PETERSON "A" #1	1858	6610	6878	268	0	5
1023	154	95	32	SESE	AMERADA PETROL. CORP. SELMER DANIELSON #2	1929	6675	6940	265	0	5
1050	154	95	32	SESW	AMERADA PETROL. CORP. E. D. PETERSON TRACT 2 WELL #1	1875	6603	6862	259	0	0
3769	154	95	32	SESW	CALVERT DRILLING & PRODUCING CO. USA PETERSON UNIT #1	1853	6610	6874	264	0	7
5801	154	95	33	NESE	AMERADA PETROL. CORP. USA YTTREDAHL DEVONIAN UNIT #1	1880	6750	7000	250	0	0
5883	154	95	33	NESE	AMERADA PETROL. CORP. FEDERAL 33 #2	1880	6735	7000	265	0	4
7747	154	95	33	NESE	AMERADA HESS CORP. YETTERDAHL USA #2-34	1887	6660	6912	252	0	10
776	154	95	33	NWSE	AMERADA PETROL. CORP. STEVE YTTREDAHL "B" #1	1885	6655	6883	228	0	3

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
1019	154	95	33	NWSW	AMERADA PETROL. CORP. STEVE YTTREDAHL "B" #2	1878	6643	6900	257	0	0
936	154	95	33	SESE	AMERADA PETROL. CORP. USA YTTREDAHL U. #1	1934	6665	6920	255	0	6
5727	154	95	33	SESE	AMERADA HESS CORP. FEDERAL 33 #1	1923	6658	6910	252	0	3
7607	154	95	33	SESE	AMERADA HESS CORP. FEDERAL #33-3D	1951	6685	6940	255	0	0
907	154	95	33	SESW	AMERADA PETROL. CORP. SELMER DANIELSON #1	1937	6700	6940	240	0	0
305	154	95	33	SWNE	AMERADA PETROL. CORP. STEVE YTTREDAHL #1	1822	6610	6828	218	0	0
517	154	95	34	NESW	AMERADA PETROL. CORP. STEVE YTTREDAHL A #1	1880	6650	6895	245	0	3
691	154	95	34	NWSE	AMERADA PETROL. CORP. YTTREDAHL UNIT #1	1877	6668	6917	249	0	0
7066	154	95	34	NWSE	TEXACO, INC. SILURIAN UNIT 8 #1	1881	6722	6963	241	0	0
901	154	95	34	NWSW	AMERADA PETROL. CORP. STEVE YTTREDAHL NO. 2	2249	6888	7160	272	0	4
7001	154	95	34	NWSW	TEXACO, INC. & AMERADA RED RIVER UNIT 1 #1	1893	6645	6895	250	0	3
7587	154	95	34	NWSW	TEXACO, INC. SILURIAN UNIT 5 #1X	1879	6640	6890	250	0	0
1070	154	95	34	SENW	AMERADA PETROL. CORP. STEVE YTTREDAHL #3	1853	6625	6878	253	0	0
674	154	95	34	SESE	AMERADA PETROL. CORP. USA LEACH TRACT 1 #I	1948	6767	7005	238	0	0
5284	154	95	34	SESW	TEXACO, INC. CHARLSON MAD. NORTH UNIT D234	1928	6700	6937	237	0	0
5410	154	95	34	SESW	TEXACO, INC. DEVONIAN UNIT #7	1949	6705	6940	235	0	0
455	154	95	34	SWSW	AMERADA PETROL. CORP. GOV'T FRUH #1	1951	6704	6950	246	0	0
912	154	95	35	NWSW	AMERADA PETROL. CORP. USA LEACH TRACT 1 #2	1882	6783	7025	242	0	0
1209	154	96	1	NWNW	AMERADA PETROL. CORP. WIKAMP #3	1911	6530	6797	267	0	0
1266	154	96	1	SENW	AMERADA PETROL. CORP. WOODROW SVEEN #1	1955	6600	6865	265	0	0
757	154	96	2	NWNE	AMERADA PETROL. CORP. W. C. KAMP #2	1894	6520	6787	267	0	7
11755	154	96	2	NWNW	AMERADA HESS CORP. SVEEN 2-22	1915	6575	6840	265	0	15
11211	154	96	3	NENW	AMERADA HESS CORP. W. KAMP 3-21	1882	6525	6800	275	0	60
11544	154	96	3	NWSW	AMERADA HESS CORP. HARTSOCH 3-13	1876	6537	6795	258	0	30
1447	154	96	9	NENE	AMERADA PETROL. CORP. WALTER FERGUSON #1	1865	6540	6815	275	0	50
2326	154	96	34	SWSE	AMERADA PETROL. CORP. HARRY MENDEHALL #1	2144	7010	7255	245	0	5
357	154	96	36	NESW	AMERADA PETROL. CORP. N.DAK. "B" TRACT 4 #1	1867	6735	6960	225	0	0
1333	154	96	36	SESE	AMERADA PETROL. CORP. N.D. "H" #1	2030	6875	7100	225	0	0
11997	154	97	36	NESW	TEXACO, INC. RENBARGER-WOLD (NCT-1) #1	1899	8403	8715	312	0	7
2828	154	98	15	NWNW	TEXACO, INC. L. J. HOVDE #1	2233	8027	8235	208	0	6
8082	154	99	5	NWNW	TEXAS GAS EXPLOR. CORP. SPRINGBROOK-BIBLER #1-5	2200	7962	8163	201	0	3
11975	154	99	9	SENE	SUPERIOR OIL CO. PAULSON 9-42	2364	8185	8407	222	0	3
12234	154	99	11	SESW	TEXACO, INC. R. L. PETTY #1	2347	8205	8423	218	0	0
11608	154	99	31	SWSW	TENNECO OIL CO. SKURDAL 1-31	2245	8070	8304	234	0	0
7074	154	99	36	SWSE	NORTHWEST EXPLOR. CO. LONG CREEK #1	2256	8065	8318	253	0	7

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
8265	154	99	36	SWSE	NORTHWEST EXPLOR. CO. LONG CREEK #3	2252	8067	8313	246	0	7
12320	154	100	1	NENE	TXP OPERATING CO. TXPOC-BARTON #41-1	2234	7947	8180	233	0	0
12323	154	100	1	NENW	TXP OPERATING CO. TXPOC-SUDDERTH #11-1	2168	7857	8087	230	0	4
7079	154	100	3	NWNW	MOSBACHER PRUET OIL CO. HEFFLEFINGER #3-1	2167	7850	8078	228	0	0
11141	154	100	4	C NE	HARPER OIL CO. BURK 7-4	2131	7834	8052	218	0	0
8793	154	100	5	SESE	TEXAS GAS EXPLOR. CORP. FEDERAL #1-5	2066	7762	8000	238	0	4
8820	154	100	12	SWSW	SAMEDAN OIL CORP. KUNKLE #1-12	2177	7940	8177	237	0	0
8256	154	100	13	SWSW	SAMEDAN OIL CORP. MINERALS #1	2241	7965	8202	237	0	4
9111	154	100	14	NESW	SAMEDAN OIL CORP. KNOSHAUG #1-14	2204	7953	8200	247	0	6
9715	154	100	15	SESW	EDWIN L. COX & BERRY R. COX HANSON #24-15	2101	7805	8047	242	0	5
7140	154	100	16	NWNW	BROWNLIE, WALLACE, ARMSTRONG & BANDER STATE #16-11	2007	7645	7878	233	0	21
7504	154	100	16	SESE	SAMEDAN OIL CORP. STATE OF N. D. #1	2057	7757	7992	235	0	3
2861	154	100	17	SESW	DAKOTA SALT & CHEMICAL DAKOTA SALT-CHEMICAL CO. #1	1883	7525	7743	218	0	0
8614	154	100	17	SWNW	HARDY SALT CO. NELSON #1	2066	7730	7950	220	0	0
6685	154	100	17	SWSW	HARDY SALT CO. HARDY #4	2072	7725	7948	223	0	0
7285	154	100	18	NESE	HARDY SALT CO. HARDY LEE #1	2002	7674	7893	219	0	0
7187	154	100	18	SENE	BWAB, INC. DELANEY #18-42	2013	7682	7902	220	0	0
7290	154	100	19	NENE	HARDY SALT CO. B. P. O. E. #1	1913	7558	7785	227	0	0
9675	154	100	19	NWSE	FLYING J EXPLOR. & PROD., INC. WISEMAN #10-19	1873	7530	7758	228	0	0
2476	154	100	20	NENW	DAKOTA SALT & CHEMICAL W. C. SVEEN ET UX #1	3052	7550	7760	210	0	0
7286	154	100	20	NWNW	HARDY SALT CO. HARDY #5	1931	7588	7810	222	0	0
9864	154	100	20	SESW	MESA PETROL. CO. BURDICK 20 #1	1869	7560	7778	218	0	0
9657	154	100	20	SWSE	HARDY SALT CO. BRAKKEN #2	1924	7590	7820	230	0	0
8137	154	100	21	NENW	SAMEDAN OIL CORP. FEDORENKO #1-21	2024	7687	7913	226	0	3
8650	154	100	21	SESW	SAMEDAN OIL CORP. MAVIS JENNER #1-21	2040	7715	7950	235	0	4
9526	154	100	22	SWSW	SAMEDAN OIL CORP. JENNER #1-22	1986	7714	7943	229	0	3
8646	154	100	23	NENE	SAMEDAN OIL CORP. DONAHUE #1	2337	8070	8312	242	0	0
9468	154	100	23	NESW	SAMEDAN OIL CORP. ETZEL #1-23	2169	7880	8130	250	0	6
999	154	100	23	SWNE	TEXACO, INC. J. M. DONAHUE #1	2253	7975	8228	253	0	0
11761	154	100	25	SENW	LOUISIANA LAND & EXPLOR. CO. BOSS 22-25 1	2220	7990	8238	248	0	4
9778	154	100	27	SWNW	SAMEDAN OIL CORP. OLSON/HANSON #1-27	2095	7792	8032	240	0	4
9718	154	100	27	SWSW	LOUISIANA LAND & EXPLOR. CO. BRATLIEN #14-27	2116	7825	8062	237	0	5
9854	154	100	28	NWSE	MESA PETROL. CO. BURDICK 28 #1	2076	7777	8010	233	0	7
10151	154	100	28	SENE	LOUISIANA LAND & EXPLOR. CO. BURDICK 42-28 #5	2081	7780	8017	237	0	5
9788	154	100	28	SESW	LOUISIANA LAND & EXPLOR. CO. BRATLIEN #24-28	1916	7603	7838	235	0	4

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
9855	154	100	28	SWNW	MESA PETROL. CO. BURDICK 28 #2	1910	7600	7833	233	0	4
10070	154	100	29	NENW	LOUISIANA LAND & EXPLOR. CO. BURDICK #21-29	1879	7545	7775	230	0	0
8701	154	100	29	NWNE	HARDY SALT CO. BRAKKEN #1	1884	7550	7780	230	0	0
9969	154	100	29	NWSE	HARDY SALT CO. PAPINEAU #1	1872	7538	7765	227	0	5
10098	154	100	29	NWSW	SAMEDAN OIL CORP. MONSON TRUST #1	1874	7548	7780	232	0	0
10279	154	100	30	SENE	HARDY SALT CO. HARDY-FURLONG BRAKKEN #24-30	1872	7543	7763	220	0	3
9417	154	100	33	NENE	LOUISIANA LAND & EXPLOR. CO. BRATLIEN 41-33 #1	2115	7820	8054	234	0	3
9693	154	100	33	SENW	LOUISIANA LAND & EXPLOR. CO. BRATLIEN #22-33	1911	7617	7828	211	0	0
10194	154	100	33	SESW	LOUISIANA LAND & EXPLOR. CO. BRATLIEN 24-33 #4	1895	7608	7820	212	0	3
9726	154	100	34	NWNW	LOUISIANA LAND & EXPLOR. CO. BRATLIEN #11-34	2125	7845	8085	240	0	5
11099	154	100	35	SWSW	TEXAS GAS EXPLOR. CORP. JACKSON TRUST 14-35	2215	8000	8240	240	0	0
11516	154	100	36	SWNW	HNG OIL CO. STATE 36 1	2174	7980	8217	237	0	4
11514	154	100	36	SWSE	HNG OIL CO. STATE 36 2	2221	8038	8270	232	0	4
12027	154	101	2	SESW	RAYMOND T. DUNCAN VIZINA NO. 1	1952	7587	7807	220	0	0
11961	154	101	18	SESE	HARPER OIL CO. FEIST 16-18	2065	7727	7940	213	0	0
11757	154	101	20	NENW	HARPER OIL CO. O'NEILL 3-20	2041	7680	7900	220	0	3
8423	154	102	9	SESW	GULF OIL CORP. ALFSON #1-9-4C	2155	7678	7890	212	0	0
8410	154	102	25	NWSE	EXXON CORP. CLARK #1	2123	7748	7964	216	0	0
12242	154	102	33	SWSE	JOHN L. COX MARTIN #16-33	2186	7795	8005	210	0	6
11846	154	102	34	SESE	HARPER OIL CO. HANSEN 16-34	2106	7690	7910	220	0	10
11930	154	102	34	SESW	HARPER OIL CO. HANSEN 14-34	1993	7587	7802	215	0	7
11657	154	102	35	SWSW	HARPER OIL CO. HANSEN 13-35	2112	7710	7926	216	0	10
5992	154	103	4	NESW	CAROLINE HUNT SCHOELLKOPF LOUISE OYLOE #1	2305	7755	7935	180	0	10
4597	154	103	5	SWNE	LAMAR HUNT DONALD VOLL #1	2338	7745	7930	185	0	8
5425	154	103	7	NWSE	TREND EXPLOR. CO. & PATRICK PETROL. O. HAUGEN #1	2268	7670	7842	172	0	0
4510	154	103	7	SWNE	LAMAR HUNT BANK OF N. D. OYLOE #1	2268	7675	7850	175	0	0
5373	154	103	7	SWNE	TREND EXPLOR. CO. & PATRICK PETROL. OYLOE-BANK OF N. D. #1-A	2254	7660	7830	170	0	0
9395	154	103	20	NWNE	VIERSEN & COCHRAN GESSNER #1	2241	7676	7863	187	0	0
4754	154	103	21	NESE	SAM BOREN ROOKE #1	2223	7683	7880	197	0	0
8730	154	103	24	SWSW	POGO PRODUCING CO. BERGSTROM #1-24	2295	7790	7993	203	0	7
8731	154	103	27	SWNE	POGO PRODUCING CO. ANDERSON #1-27	2232	7750	7945	195	0	5
5761	155	86	9	NWNW	INLAND OIL & GAS CORP. MEYER #1-9	2234	0	0	0	0	0
10505	155	86	20	NESE	SHELL OIL CO. EVERSON #43-20	2261	0	0	0	0	0
10725	155	86	27	SWSW	TOTAL PETROL., INC. WATNE #1-27	2183	0	0	0	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
11669	155	86	30	NWSE	CENEX SMITH 10-30	2160	0	0	0	0	0
7711	155	86	31	SENE	MARATHON OIL CO. BUTTERFIELD #31-42	2192	0	0	0	0	0
5795	155	86	36	SWSE	HAWN BROS. & HANOVER MANAGEMENT STATE #1	2240	0	0	0	0	0
7612	155	87	15	SESW	MARATHON OIL CO. BERG #15-24	2219	5950	5990	40	0	0
8749	155	87	16	NWNE	MARATHON OIL CO. STATE #16-31	2137	5900	5935	35	0	0
7368	155	89	19	NWSE	MARATHON OIL CO. JONES #19-33	2034	6325	6502	177	0	0
6764	155	90	2	NENW	DONALD C. SLAWSON KVAMME # 2-1	2220	6497	6695	198	0	0
12032	155	90	9	SESE	TRUE OIL CO. BERGE 44-9	2277	6700	6885	185	0	0
8949	155	90	16	SESE	DAVIS OIL CO. EAST STANLEY #1	2304	6740	6940	200	0	12
7190	155	90	18	SWNW	TERRA RES., INC. ARMOUR #1-18	2284	6860	7037	177	0	3
11900	155	90	18	SWSE	BROOKS EXPLOR., INC. ARMOUR 1-18	2268	6820	6993	173	0	0
7234	155	90	18	SWSW	MARATHON OIL CO. OGDEN ARMOUR #18-14	2286	6830	7025	195	0	8
6974	155	90	19	NESE	BWAB, INC. STATE #19-43	2284	6872	7048	176	0	4
7369	155	90	19	SWNE	MARATHON OIL CO. TENBORG #19-32	2281	6851	7010	159	0	0
10810	155	90	20	SWNW	BROOKS EXPLOR., INC. OLSON 1-20	2307	6865	7040	175	0	3
7220	155	90	21	NESE	MARATHON OIL CO. VERNON ROLFE #21-43	2317	6770	6950	180	14	14
6159	155	90	21	SWSW	TRIGOOD OIL CO. HAZEL ROLFE #1	2318	6820	7020	200	0	3
474	155	90	24	NWNW	WILLIAM HERBERT HUNT W. & U. DUNHAM #1	2161	6500	6700	200	0	0
8157	155	90	29	NENW	BWAB, INC. HARSTAD #29-21	2327	6897	7075	178	0	3
6885	155	90	30	NENE	BWAB, INC. ORVILLE HARSTAD #30-41	2307	6888	7070	182	0	0
9243	155	91	1	NWNW	TRUE OIL CO. BROOKS #11-1	2236	6735	6920	185	0	0
10544	155	91	2	SWSW	BROOKS EXPLOR., INC. SCHAEFER #1-2	2232	6800	7125	325	0	42
9866	155	91	3	NESE	BROOKS EXPLOR., INC. SCHAEFER ET AL #1-3	2224	6797	7032	235	0	27
11577	155	91	3	NESW	BROOKS EXPLOR., INC. SCHAEFER 2-3	2224	6840	7037	197	0	45
9949	155	91	3	SENW	BROOKS EXPLOR., INC. NELSON #1-3	2229	6790	7175	385	152	152
10071	155	91	3	SWNE	BROOKS EXPLOR., INC. JELLESED #1-3	2212	6785	7017	232	0	18
7506	155	91	4	NENE	BROOKS EXPLOR., INC. ENANDER #1	2248	6905	7220	315	0	70
6537	155	91	9	SENE	THOMSON PETROL., INC. CORPRON #1-9	2271	6927	7135	208	0	0
10370	155	91	10	NENE	BROOKS EXPLOR., INC. JELLESED #1-10	2244	6860	7087	227	35	20
6289	155	91	10	NESW	THOMSON PETROL., INC. HARSTAD ET AL #1	2281	6940	7112	172	12	23
6734	155	91	10	NWSE	DONALD C. SLAWSON HARSTAD #10-1	2267	6920	7100	180	10	30
6376	155	91	10	SWSE	THOMSON PETROL., INC. HARSTAD ET AL #2	2265	6922	7110	188	0	46
11885	155	91	11	NENW	BROOKS EXPLOR., INC. JELLESED 1-11X	2230	6827	7120	293	0	70
7851	155	91	11	NESE	BROOKS EXPLOR., INC. ROGSTAD #1-11	2227	6823	7017	194	0	30
7049	155	91	11	SENW	BROOKS EXPLOR., INC. JELLESED ET AL #1-11	2223	6812	7138	326	20	55

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
7852	155	91	11	SWNE	BROOKS EXPLOR., INC. JELLESED ET AL #2-11	2191	6805	7030	225	0	82
6536	155	91	11	SWSW	THOMSON PETROL., INC. JELLESTAD ET AL #1-11	2209	6830	7105	275	0	45
7138	155	91	12	SWSE	GULF OIL CORP. OLIVER KORTERUD #1-12-3D	2276	6852	7000	148	0	0
7674	155	91	12	SWSW	GULF OIL CORP. MONTGOMERY #1-12-4D	2256	6865	7042	177	0	10
12230	155	91	13	NENW	TYREX OIL CO. JELLESED #13-21	2269	6860	7040	180	0	6
7545	155	91	13	NESE	MARATHON OIL CO. OGDEN ARMOUR #13-43	2273	6870	7050	180	0	0
7362	155	91	13	NESW	MARATHON OIL CO. OGDEN ARMOUR #13-23	2310	6890	7060	170	0	0
6949	155	91	13	SWNE	MARATHON OIL CO. STATE #13-32	2279	6860	7040	180	0	5
6771	155	91	13	SWNW	MARATHON OIL CO. JELLESED #1	2254	6860	7038	178	0	10
6971	155	91	14	NENE	MARATHON OIL CO. ROGSTAD STATE #1	2248	6840	7070	230	0	52
7807	155	91	14	NESE	MARATHON OIL CO. HARSTAD #14-43	2261	6870	7100	230	0	45
6538	155	91	14	NWNW	THOMSON PETROL., INC. JELLESTAD FED. #1-14	2293	6940	7130	190	0	16
6402	155	91	16	NENE	THOMSON PETROL., INC. CORPRON-STATE #1	2252	6960	7160	200	0	30
9278	155	91	23	NENE	MARATHON OIL CO. HOLTER #23-41	2283	6926	7185	259	0	45
7750	155	91	24	NENW	MARATHON OIL CO. ENGE #24-21	2273	6918	7065	147	0	15
12231	155	91	24	NESW	PRENALTA CORP.-TYREX OIL CO. TRYEX ENGE #24-23	2285	6977	7105	128	0	0
12188	155	91	24	NWNW	BROSCHAT ENGINEERING & MANAGEMENT SERVICE ENGE #24-1	2275	6912	7070	158	0	20
6494	155	91	26	SESE	BWAB, INC. RAYMOND CRAFT #26-44	2314	7030	7198	168	0	55
6834	155	91	27	NWSE	MARATHON OIL CO. CRAFT #1	2315	7075	7254	179	0	0
9458	155	92	35	NWSE	SUN EXPLOR. & PROD. CO. STROBECK #1-35	2324	7277	7480	203	20	20
3134	155	93	8	SWNW	SHELL OIL CO. STANLEY PROCHASKA #12-8-1	2297	7403	7623	220	0	8
2273	155	93	15	NWSW	STEWART PETROL. CVANCARA #1	2361	7520	7737	217	0	6
8936	155	94	4	NENE	RANGER OIL CO. THOMPSON #1-4	2249	7293	7533	240	0	0
7570	155	94	9	NENE	KISSINGER PETROL. CORP. GRONDALE #1-9	2074	7140	7390	250	0	0
3227	155	94	16	SESE	AMERADA PETROL. CORP. NORTH DAKOTA "N" #1	2030	7130	7378	248	0	0
9354	155	94	16	SWSE	RANGER OIL CO. STATE #15-16	2201	7300	7542	242	0	0
722	155	95	5	NWNE	AMERADA PETROL. CORP. SYLVESTER C. RAMBERG 4	2323	6920	7175	255	0	0
71	155	95	5	NWNW	AMERADA PETROL. CORP. S. RAMBERG #1	2299	6825	7085	260	0	0
489	155	95	5	NWSW	AMERADA PETROL. CORP. SYLVESTER RAMBERG #2	2283	6800	7085	285	0	15
719	155	95	5	SENW	AMERADA PETROL. CORP. S. RAMBERG #3	2258	6820	7085	265	0	12
603	155	95	5	SESW	AMERADA PETROL. CORP. RAMBERG UNIT 1	2271	6847	7122	275	0	0
216	155	95	6	NENE	AMERADA PETROL. CORP. J. IVERSON #2	2327	6837	7098	261	0	0
347	155	95	6	NENW	AMERADA PETROL. CORP. J. IVERSON #3	2350	6840	7100	260	0	0
5617	155	95	6	NWNW	AMERADA PETROL. CORP. B. L. D. U. G-308	2344	6835	7100	265	0	8
709	155	95	6	NWSE	AMERADA PETROL. CORP. E. M. HAUGEN #3	2359	6860	7137	277	0	10

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
223	155	95	6	NWSW	AMERADA PETROL. CORP. C. IVERSON #2	2377	6890	7155	265	0	0
1812	155	95	6	SENE	AMERADA PETROL. CORP. I-H-R UNIT #1	2331	6845	7110	265	0	0
376	155	95	6	SESE	AMERADA PETROL. CORP. E. M. HAUGEN #2	2331	6843	7122	279	0	15
710	155	95	6	SWNE	AMERADA PETROL. CORP. J. IVERSON #4	2345	6850	7113	263	0	0
87	155	95	6	SWNW	AMERADA PETROL. CORP. JOHN IVERSON	2349	6843	7105	262	0	0
25	155	95	6	SWSW	AMERADA PETROL. CORP. C. IVERSON #1	2390	6880	7160	280	0	30
86	155	95	7	NENW	AMERADA PETROL. CORP. A. IVERSON #2	2393	6892	7170	278	0	0
224	155	95	7	NWNE	AMERADA PETROL. CORP. E. M. HAUGEN #1	2380	6875	7160	285	0	0
66	155	95	7	NWNW	AMERADA PETROL. CORP. P. O. IVERSON #1	2385	6885	7162	277	0	0
439	155	95	7	NWSE	AMERADA PETROL. CORP. E. H. RAMBERG 3	2321	6838	7125	287	0	15
475	155	95	7	SENE	AMERADA PETROL. CORP. A. IVERSON T 2 #2	2359	6870	7163	293	0	10
721	155	95	7	SESE	AMERADA PETROL. CORP. E. H. RAMBERG #4	2288	6790	7080	290	0	13
79	155	95	7	SESW	AMERADA PETROL. CORP. E. H. RAMBERG #1	2341	6843	7130	287	0	17
2148	155	95	7	SESW	AMERADA PETROL. CORP. IVERSON-RAMBERG UNIT #1	2366	6890	7162	272	0	0
236	155	95	7	SWSW	AMERADA PETROL. CORP. P. O. IVERSON U. #2	2381	6890	7168	278	0	8
490	155	95	8	NWNW	AMERADA PETROL. CORP. C. M. MOE #1	2328	6850	7150	300	0	0
937	155	95	8	NWSW	AMERADA PETROL. CORP. C. M. MOE #2	2317	6845	7130	285	0	5
680	155	95	8	SENW	AMERADA PETROL. CORP. C. M. MOE "A" #1	2327	6895	7183	288	0	8
9356	155	95	10	NWSE	RANGER OIL CO. HEEN #10-10	2274	7065	7323	258	0	4
7050	155	95	16	NWSE	KISSINGER PETROL. CORP. STATE OF N. D. #10-16	2144	6875	7135	260	30	30
8899	155	95	17	NESW	AMERADA HESS CORP. KROGEN-HAGEN #17-23	2194	6757	7040	283	0	7
970	155	95	17	NWNW	AMERADA PETROL. CORP. RAMBERG-PEARSON #1	2243	6777	7055	278	0	10
865	155	95	17	NWSE	AMERADA PETROL. CORP. R. LINDVIG #1	2187	6780	7070	290	0	0
486	155	95	17	NWSW	AMERADA PETROL. CORP. R. A. PEARSON #1	2195	6733	7020	287	0	0
1031	155	95	17	SENW	AMERADA PETROL. CORP. RUBY A. PEARSON #3	2181	6772	7030	258	0	0
604	155	95	17	SESW	AMERADA PETROL. CORP. A. T. KROGEN #1	2169	6720	7015	295	0	15
34	155	95	18	NENW	RUDMAN RES., INC. M. IVERSON #1	2326	6850	7130	280	0	0
759	155	95	18	NESE	AMERADA PETROL. CORP. R. PEARSON #2	2234	6753	7045	292	0	0
593	155	95	18	NESW	AMERADA PETROL. CORP. M. IVERSON #A-1	2309	6830	7110	280	0	0
6362	155	95	18	NESW	AMERADA HESS CORP. MARVIN IVERSON #23-18	2305	6818	7108	290	0	10
138	155	95	18	NWNE	AMERADA PETROL. CORP. E. M. RAMBERG #2	2318	6825	7110	285	0	7
1022	155	95	18	SESE	AMERADA PETROL. CORP. R. AARSTAD TRACT 1 #1	2258	6795	7075	280	0	0
281	155	95	18	SWNE	P. R. RUTLEDGE R. AARSTAD #1	2304	6815	7080	265	0	8
1424	155	95	19	NWNE	AMERADA PETROL. CORP. A. T. KROGEN "A" #3	2257	6810	7077	267	0	7
8246	155	95	19	NWNE	AMERADA HESS CORP. KROGEN #1-19D	2225	6775	7055	280	0	15

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
1247	155	95	19	NWSE	AMERADA PETROL. CORP. M. IVERSON #4 "A"	2209	6770	7045	275	0	50
963	155	95	19	NWSW	AMERADA PETROL. CORP. R. ANDERSON #1	2265	6820	7090	270	0	15
1017	155	95	19	SENE	AMERADA PETROL. CORP. A. T. KROGEN "A" #1	2223	6800	7063	263	0	0
1124	155	95	19	SESE	AMERADA PETROL. CORP. M. IVERSON "A" #2	2232	6810	7088	278	0	15
1025	155	95	19	SESW	AMERADA PETROL. CORP. D. L. ANDERSON #3	1540	6800	7060	260	0	0
9625	155	95	19	SWSW	AMERADA HESS CORP. R. H. ANDERSON #19-14	2256	6838	7095	257	0	5
998	155	95	20	NWNE	AMERADA PETROL. CORP. A. T. KROGEN #3	2115	6715	6990	275	0	12
720	155	95	20	NWNW	AMERADA PETROL. CORP. A. T. KROGEN #2	2228	6795	7068	273	0	7
1113	155	95	20	NWSE	AMERADA PETROL. CORP. NELSON NORDBY U. #1	2082	6675	6950	275	0	5
1168	155	95	20	NWSW	AMERADA PETROL. CORP. A. T. KROGEN "A" #2	2198	6780	7055	275	0	0
1293	155	95	20	SENE	AMERADA PETROL. CORP. A. T. KROGEN #5	2167	6792	7063	271	0	0
1046	155	95	20	SENW	AMERADA PETROL. CORP. A. T. KROGER #4	2123	6705	6975	270	0	0
1232	155	95	20	SESE	AMERADA PETROL. CORP. NORDBY-KROGEN #1	2053	6695	6945	250	0	0
1160	155	95	20	SESW	AMERADA PETROL. CORP. E. ANDERSON #2	2089	6675	6958	283	0	7
9845	155	95	20	SESW	AMERADA HESS CORP. E. ANDERSON #20-24	2134	6730	6995	265	0	0
2007	155	95	21	NWNW	CAROLINE HUNT SANDS M. STRANGELAND #2	2115	6785	7062	277	0	0
2040	155	95	21	NWSW	AMERADA PETROL. CORP. A. T. KROGEN #6	2106	6785	7047	262	55	55
1533	155	95	21	SENW	CAROLINE HUNT SANDS M. STRANGELAND #1	2093	6795	7050	255	0	0
1600	155	95	21	SESW	SAM G. HARRISON M. STRANGELAND #1	2113	6797	7085	288	0	12
9355	155	95	25	NWSE	RANGER OIL CO. KOROM #10-25	2144	7205	7457	252	0	0
1321	155	95	28	NWNW	AMERADA PETROL. CORP. S. NORDBY #1	2137	6802	7065	263	0	0
1494	155	95	28	NWSW	AMERADA PETROL. CORP. NORDBY UNIT #1	2095	6737	7012	275	0	15
2616	155	95	28	SENW	LAMAR HUNT S. NORDBY #1	2166	6835	7135	300	0	28
1743	155	95	28	SESW	AMERADA PETROL. CORP. K. NORDBY UNIT #1	2151	6830	7130	300	0	30
1180	155	95	29	NWNE	AMERADA PETROL. CORP. K. S. NORDBY T 1 #1	2051	6680	6932	252	0	0
1154	155	95	29	NWNW	AMERADA PETROL. CORP. A. M. CHELSON #1	2222	6832	7087	255	0	0
1122	155	95	29	NWSE	AMERADA PETROL. CORP. F. FERGUSON #1	2067	6700	6965	265	0	20
1199	155	95	29	NWSW	AMERADA PETROL. CORP. F. FERGUSON T 1 #3	2165	6773	7055	282	0	0
1240	155	95	29	SENE	AMERADA PETROL. CORP. U.S.A. NORDBY UNIT #1	2139	6770	7025	255	0	60
1056	155	95	29	SENW	AMERADA PETROL. CORP. E. ANDERSON #1	2057	6697	6942	245	0	0
1322	155	95	29	SESE	AMERADA PETROL. CORP. F. FERGUSON "A" #3	2041	6695	6955	260	0	0
1245	155	95	29	SESW	AMERADA PETROL. CORP. F. FERGUSON "A" #2	2034	6684	6930	246	0	0
792	155	95	30	NWNE	AMERADA PETROL. CORP. M. IVERSON "A" #1	2225	6800	7070	270	0	10
687	155	95	30	NWNW	AMERADA PETROL. CORP. D. L. ANDERSON #1	2152	6733	6993	260	0	0
1117	155	95	30	NWSE	AMERADA PETROL. CORP. C. W. OLSEN #1	2179	6780	7048	268	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
1215	155	95	30	NWSW	AMERADA PETROL. CORP. D. L. ANDERSON #4	2060	6655	6912	257	0	3
9754	155	95	30	NWSW	AMERADA HESS CORP. D. L. ANDERSON #30-23	2086	6673	6940	267	0	4
1212	155	95	30	SENE	AMERADA PETROL. CORP. M. IVERSON "A" #3	2190	6820	7062	242	0	0
1013	155	95	30	SENW	AMERADA PETROL. CORP. D. L. ANDERSON #2	2132	6710	6975	265	0	0
1214	155	95	30	SESE	AMERADA PETROL. CORP. C. W. OLSON #2	2100	6715	6990	275	0	0
1278	155	95	30	SESW	AMERADA PETROL. CORP. N. SIMON #4	2048	6650	6906	256	0	0
1213	155	95	31	NWNE	AMERADA PETROL. CORP. N. SIMON #2	2083	6710	6972	262	0	3
1096	155	95	31	NWNW	AMERADA PETROL. CORP. N. SIMON #1	2066	6673	6938	265	0	0
1283	155	95	31	NWSE	AMERADA PETROL. CORP. IRA KNOX #2	1978	6640	6890	250	0	0
1238	155	95	31	NWSW	AMERADA PETROL. CORP. NETTIE SIMON #3	1981	6632	6880	248	0	0
1119	155	95	31	SENE	AMERADA PETROL. CORP. C. C. HALVORSON A-2	2012	6647	6918	271	0	0
1146	155	95	31	SENW	AMERADA PETROL. CORP. IRA KNOX #1	2002	6645	6887	242	0	5
1099	155	95	31	SESE	AMERADA PETROL. CORP. HALVORSON A #1	2005	6668	6923	255	0	0
1373	155	95	32	NWNE	AMERADA PETROL. CORP. FERGUSON UNIT #1	2005	6650	6910	260	0	9
1141	155	95	32	NWNW	AMERADA PETROL. CORP. FRED FERGUSON T1 #2	2084	6725	6975	250	0	0
1020	155	95	32	NWSE	AMERADA PETROL. CORP. C. C. HALVORSON #1	1988	6620	6903	283	0	12
1072	155	95	32	NWSW	AMERADA PETROL. CORP. F. L. KAHLERT #1	2037	6667	6940	273	0	8
1458	155	95	32	SENE	AMERADA PETROL. CORP. HALVERSON & FERGUSON U. #1	2040	6680	6970	290	0	20
1057	155	95	32	SENW	AMERADA PETROL. CORP. F. FERGUSON TRACT1 #1	2033	6667	6932	265	0	10
11089	155	95	32	SENW	AMERADA HESS CORP. FERGUSON 32-22	2034	6655	6917	262	0	23
1507	155	95	32	SESE	AMERADA PETROL. CORP. C. C. HALVERSON "B" 1	1978	6627	6900	273	0	8
1158	155	95	32	SESW	AMERADA PETROL. CORP. C. C. HALVORSON #2	1967	6603	6893	290	0	8
1565	155	95	33	NWNW	AMERADA PETROL. CORP. S. HALVERSON #1	2061	6720	7010	290	85	85
1064	155	95	33	NWSW	AMERADA PETROL. CORP. R. C. RAMBERG ESTATE #1	1988	6640	6932	292	0	15
758	155	95	34	NWNE	HUNT OIL CO. B. E. HOVE #1	2092	6878	7160	282	0	12
352	155	96	1	NENW	AMERADA PETROL. CORP. M. IVERSON #3	2334	6780	7042	262	0	4
46	155	96	1	NESE	AMERADA PETROL. CORP. M. IVERSON #1	2380	6890	7150	260	0	0
5317	155	96	1	NESE	AMERADA PETROL. CORP. BEAVER LODGE DEV. UNIT F 307	2362	6875	7132	257	0	0
496	155	96	1	NESW	AMERADA PETROL. CORP. A. IVERSON #2	2338	6830	7080	250	0	0
399	155	96	1	NWNE	AMERADA PETROL. CORP. C. IVERSON "A" #2	2337	6800	7062	262	0	4
1513	155	96	1	NWSW	AMERADA PETROL. CORP. IVERSON & NELSON U. "A" #1	2339	6827	7080	253	0	0
74	155	96	1	SENE	AMERADA PETROL. CORP. C. IVERSON A 1	2354	6847	7110	263	0	0
5616	155	96	1	SENW	AMERADA PETROL. CORP. B. L. D. U. E 308	2338	6795	7050	255	0	0
75	155	96	1	SESE	AMERADA PETROL. CORP. M. IVERSON #2	2373	6885	7160	275	0	50
2293	155	96	1	SWNE	AMERADA PETROL. CORP. IVERSON #1	2351	6840	7095	255	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
165	155	96	1	SWNW	AMERADA PETROL. CORP. MATH IVERSON #1	2340	6793	7052	259	0	0
7871	155	96	1	SWSE	AMERADA HESS CORP. B. L. M. U. I-9	2368	6886	7143	257	0	0
575	155	96	1	SWSW	AMERADA PETROL. CORP. L. NELSON TRACT 1 WELL #2	2333	6810	7065	255	0	0
217	155	96	2	NENE	AMERADA PETROL. CORP. M. IVERSON #2	2323	6753	7018	265	0	0
261	155	96	2	NENW	AMERADA PETROL. CORP. H. E. DAVIDSON "B" #1	2344	6790	7048	258	0	10
161	155	96	2	NESE	AMERADA PETROL. CORP. A IVERSON #1	2329	6790	7050	260	0	0
640	155	96	2	NESW	AMERADA PETROL. CORP. N. NELSON U. #2	2311	6750	7007	257	0	0
1231	155	96	2	SENE	AMERADA PETROL. CORP. IVERSON & NELSON U. #1	2316	6755	7020	265	0	0
5355	155	96	2	SENW	AMERADA PETROL. CORP. BEAVER LODGE DEV. UNIT C 308	2332	6792	7038	246	0	0
81	155	96	2	SESE	AMERADA PETROL. CORP. L. NELSON #1	2343	6807	7060	253	0	0
3900	155	96	2	SESE	AMERADA PETROL. CORP. BEAVER LODGE MAD. U. E-9	2329	6805	7045	240	0	0
570	155	96	2	SWNE	AMERADA PETROL. CORP. M. IVERSON #4	2346	6780	7050	270	0	0
3398	155	96	2	SWNE	AMERADA PETROL. CORP. BEAVER LODGE DEV. U. D 308 A	2325	6767	7030	263	0	0
789	155	96	2	SWNW	AMERADA PETROL. CORP. M. IVERSON #5	2296	6745	7000	255	0	0
107	155	96	2	SWSW	AMERADA PETROL. CORP. N. NELSON #1	2290	6725	6980	255	0	0
2371	155	96	2	SWSW	AMERADA PETROL. CORP. IVERSON-NELSON-DAVIDSON UNIT 1	2278	6730	6980	250	0	0
5428	155	96	2	SWSW	AMERADA PETROL. CORP. B. L. D. U. C 307	2271	6715	6965	250	0	0
745	155	96	3	NESE	AMERADA PETROL. CORP. N. NELSON #3	2228	6685	6933	248	0	0
109	155	96	3	SESW	C. W. WILLIAMS-O. D. CLARK H. DAVIDSON #1	2225	6762	7007	245	0	0
3850	155	96	3	SWNE	AMERADA PETROL. CORP. BEAVER LODGE DEV. U. B 308I	2268	6793	7035	242	0	5
690	155	96	3	SWSE	AMERADA PETROL. CORP. L. DAVIDSON #1	2234	6718	6970	252	0	0
300	155	96	10	NENE	HUNT OIL CO. S. OLSON #1	2267	6733	6967	234	0	12
310	155	96	10	NESE	HUNT OIL CO. S. OLSON #2	2281	6730	6973	243	0	4
2569	155	96	10	SENE	MCWOOD CORP. U. S. A. #11-15	2242	6712	6952	240	0	10
2375	155	96	10	SESW	AMERADA PETROL. CORP. BOE-CHARLSON UNIT #1	2208	6757	7000	243	0	5
364	155	96	10	SWNE	HUNT OIL CO. SAM OLSON #3	2219	6687	6937	250	0	7
5301	155	96	10	SWNE	AMERADA PETROL. CORP. BEAVER LODGE DEV. UNIT B 306I	2237	6716	6950	234	0	10
144	155	96	10	SWSW	AMERADA PETROL. CORP. OFORD BOE #1	2158	6742	6983	241	0	15
4716	155	96	11	C NW	AMERADA PETROL. CORP. B. L. O. U. #4	2294	6747	6994	247	0	6
143	155	96	11	NENE	AMERADA PETROL. CORP. SMITH UNIT #1	2350	6790	7067	277	0	10
234	155	96	11	NENW	AMERADA PETROL. CORP. L. NELSON TRACT 2 #1	2328	6782	7028	246	0	0
389	155	96	11	NESE	AMERADA PETROL. CORP. H. IVERSON #1	2393	6850	7115	265	0	0
610	155	96	11	NESW	HUNT OIL CO. NELSON+BOE+OLSON #1	2299	6740	6985	245	0	0
2462	155	96	11	NESW	AMERADA PETROL. CORP. NELSON UNIT #1	2279	6725	6977	252	0	10
2005	155	96	11	SENE	AMERADA PETROL. CORP. IVERSON-NOE U #1	2385	6838	7097	259	0	45

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
5298	155	96	11	SESE	AMERADA PETROL. CORP. BEAVER LODGE DEV. UNIT D 305	2360	6820	7082	262	0	12
202	155	96	11	SWNE	AMERADA PETROL. CORP. H. IVERSON #1	2352	6800	7050	250	0	40
267	155	96	11	SWNW	AMERADA PETROL. CORP. NORMAN NELSON #2	2262	6710	6950	240	0	8
5311	155	96	11	SWNW	AMERADA PETROL. CORP. BEAVER LODGE DEV. UNIT C 306	2287	6740	6976	236	0	6
445	155	96	11	SWSE	AMERADA PETROL. CORP. H. IVERSON UNIT WELL 2	2326	6776	7035	259	0	10
648	155	96	11	SWSW	HUNT OIL CO. NELSON+OLSON+BOE U 1 #2	2265	6705	6962	257	0	8
57	155	96	12	NENE	AMERADA PETROL. CORP. ALMER IVERSON #1	2387	6895	7165	270	0	0
412	155	96	12	NENW	AMERADA PETROL. CORP. L. NELSON U. #2	2349	6830	7107	277	0	10
160	155	96	12	NESW	AMERADA PETROL. CORP. G. D. MCCLINTOCK #1	2346	6835	7100	265	0	0
526	155	96	12	NWSE	AMERADA PETROL. CORP. L. IVERSON #2	2394	6888	7165	277	0	0
1982	155	96	12	SENE	AMERADA HESS CORP. IVERSON UNIT A #1	2389	6905	7172	267	0	0
85	155	96	12	SESE	AMERADA PETROL. CORP. L. E. IVERSON #1	2355	6850	7132	282	0	0
2487	155	96	12	SESW	AMERADA PETROL. CORP. MCCLINTOCK NELSON U. #1	2371	6855	7118	263	0	6
525	155	96	12	SWNE	AMERADA PETROL. CORP. A. IVERSON T 1 #2	2379	6880	7147	267	0	0
386	155	96	12	SWNW	AMERADA PETROL. CORP. L. NELSON #1	2359	6825	7090	265	0	0
5312	155	96	12	SWNW	AMERADA PETROL. CORP. BEAVER LODGE DEV. UNIT E 306	2358	6838	7095	257	0	7
533	155	96	12	SWSW	AMERADA PETROL. CORP. MCCLINTOCK #2	2375	6832	7105	273	0	8
562	155	96	13	NENE	AMERADA PETROL. CORP. OLAF GISKE #2	2358	6870	7140	270	0	0
222	155	96	13	NENW	AMERADA PETROL. CORP. OLAF GISKE #1	2345	6842	7107	265	0	15
2438	155	96	13	NWSW	AMERADA PETROL. CORP. A. ARSTAD U. #1	2300	6827	7080	253	0	7
1729	155	96	13	SENE	AMERADA PETROL. CORP. GISKE STROM U. #1	2315	6814	7100	286	0	6
5310	155	96	13	SENW	AMERADA PETROL. CORP. B. L. D. U. E 304	2333	6840	7100	260	0	0
653	155	96	14	NENE	AMERADA PETROL. CORP. A. IVERSON #2	2305	6763	7035	272	0	6
2427	155	96	14	NENE	AMERADA PETROL. CORP. IVERSON FERGUSON UNIT #1	2323	6793	7055	262	0	6
618	155	96	14	NENW	AMERADA PETROL. CORP. HALVORSON BOE U. #1	2266	6732	6990	258	0	0
5623	155	96	14	NENW	AMERADA PETROL. CORP. B. L. D. U. C 304	2265	6725	6983	258	0	0
50	155	96	14	NESE	AMERADA PETROL. CORP. ALVIN IVERSON #1	2262	6760	7030	270	0	0
2515	155	96	14	NESW	AMERADA PETROL. CORP. BOE FERGUSON U. #1	2189	6700	6957	257	0	15
255	155	96	14	SWNE	AMERADA PETROL. CORP. EARL FERGUSON #1	2276	6767	7020	253	0	10
954	155	96	15	NENE	AMERADA PETROL. CORP. SAM OLSON #1	2208	6670	6927	257	0	0
1403	155	96	15	SWNE	AMERADA PETROL. CORP. BOE-OLSON #1	2165	6640	6900	260	0	5
6065	155	96	20	SESE	TIGER OIL CO. MATTSON #1-20	1976	6790	7050	260	0	35
1895	155	96	22	NENE	AMERADA PETROL. CORP. HANSOE BOE #1	2102	6630	6908	278	0	0
5366	155	96	22	NENE	AMERADA PETROL. CORP. BEAVER LODGE DEV. UNIT B 302 X	2102	6627	6900	273	0	0
2409	155	96	23	NWSW	AMERADA PETROL. CORP. UDLAND HEIRS #1	2155	6725	6980	255	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
2147	155	96	23	SWNE	AMERADA PETROL. CORP. MOELLER WESTBERG UNIT #1	2261	6795	7060	265	0	0
887	155	96	24	NWSE	AMERADA PETROL. CORP. R. E. SMITH #1	2204	6753	7027	274	0	25
787	155	96	24	SESE	AMERADA PETROL. CORP. H. J. UDLAND #1	2204	6760	7025	265	0	0
10657	155	96	25	NENE	AMERADA HESS CORP. WILLISTON PROJECTS, INC. ET AL #25-41	2139	6767	6977	210	0	7
791	155	96	25	NWNE	AMERADA PETROL. CORP. H. K. RUD #2	2153	6715	6980	265	0	0
559	155	96	25	NWSE	AMERADA PETROL. CORP. H. CHRISTENSON #1	2057	6660	6910	250	0	0
764	155	96	25	NWSW	AMERADA PETROL. CORP. H. CHRISTENSON #2	2127	6712	6980	268	0	0
608	155	96	25	SENE	AMERADA PETROL. CORP. HALVORSON-STOCKMAN UNIT 1	2140	6740	6998	258	0	8
578	155	96	25	SENW	AMERADA PETROL. CORP. H. RUD #1	2071	6640	6907	267	0	0
904	155	96	25	SESE	AMERADA PETROL. CORP. H. CHRISTENSON #3	2085	6690	6942	252	0	10
530	155	96	25	SESW	AMERADA PETROL. CORP. OLE GRANLEY #1	2108	6685	6960	275	0	0
914	155	96	26	NWSE	AMERADA PETROL. CORP. ERICK KATHER #1	2050	6640	6905	265	0	0
733	155	96	26	SESE	AMERADA PETROL. CORP. OLE GRANLEY #2	2168	6745	7020	275	0	0
591	155	96	26	SESW	PHILLIPS PETROL. CO. MCCLURE A #1	2088	6685	6948	263	0	0
10486	155	96	27	SENW	AMERADA HESS CORP. HANSON #27-22	2085	6710	6946	236	0	0
5015	155	96	31	SESE	HOME STAKE PROD. CO. WOODROW N. SVEEN ET UX #1	1945	6840	7110	270	0	5
11517	155	96	33	SESE	BWAB, INC. C. MORTENSON 3-44	1894	6578	6838	260	0	4
5208	155	96	34	SENW	OIL DEVELOP. CO. OF TEXAS LOWELL ALLEN #1	2067	6730	6977	247	0	8
529	155	96	35	NWNE	AMERADA PETROL. CORP. WALTER KAMP #1	2045	6638	6905	267	0	0
785	155	96	35	NWSE	AMERADA PETROL. CORP. HATTIE HOUTHMAKER #2	1964	6580	6833	253	0	10
1052	155	96	35	NWSW	AMERADA PETROL. CORP. MABELLE CHARLSON #1	1925	6570	6817	247	0	0
532	155	96	35	SENE	AMERADA PETROL. CORP. HATTIE HOUTHMAKER # 1	2022	6623	6878	255	0	0
991	155	96	35	SENW	AMERADA PETROL. CORP. WALTER KAMP #2	2044	6665	6915	250	0	10
705	155	96	35	SESE	AMERADA PETROL. CORP. W. KAMP #1	1917	6517	6780	263	0	8
6388	155	96	35	SWNE	AMERADA HESS CORP. CAPA DEEP UNIT #31-35	2032	6638	6885	247	0	0
1015	155	96	36	NWNE	AMERADA PETROL. CORP. N.D. "F" #3	1975	6575	6835	260	0	6
462	155	96	36	NWNW	AMERADA PETROL. CORP. N.D. "F" #1	2107	6700	6962	262	0	0
784	155	96	36	NWSW	AMERADA PETROL. CORP. N. D. "F" #2	1951	6550	6810	260	0	20
1140	155	96	36	SENE	AMERADA PETROL. CORP. N.D. "F" #4	2002	6610	6875	265	0	6
1290	155	96	36	SENW	AMERADA PETROL. CORP. N.D. "F" #5	2038	6647	6905	258	0	15
1291	155	96	36	SESW	AMERADA PETROL. CORP. N.D. "F" #6	1902	6525	6787	262	0	0
7089	155	97	14	NESW	HUNT OIL CO. WALTER H. GRONDALE #1	2253	7390	7632	242	0	12
11796	155	97	25	SESE	TEXACO, INC. ROSE BOE "A" 1	2062	6950	7210	260	0	6
7931	155	97	33	SESW	MAPCO, INC. NCGA #14-33	2124	7705	7955	250	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
8140	155	98	13	NWNE	EXXON CORP. SOLBERG STATE #1	2363	8043	8265	222	0	6
7712	155	98	21	SWSW	SHELL OIL CO. KIRKPATRICK #14-21	2249	8010	8222	212	0	0
7915	155	98	30	SESW	BRENT EXPLOR., INC. SEATON #14-30	2278	8025	8245	220	0	6
12327	155	99	3	NENW	DEPCO, INC. MORROW #21-3	2142	7787	8000	213	0	3
12404	155	99	3	NWNE	DEPCO, INC. MOEN #31-3	2147	7805	8016	211	0	5
11349	155	99	5	SWNW	SUPERIOR OIL CO. THORNESS 5-12	2170	7785	8017	232	0	23
7405	155	99	8	SWNE	AL-AQUITAINE EXPLOR., LTD. BROWN #1-8	2116	7780	7988	208	0	0
11175	155	99	26	SWNW	LADD PETROL. CORP. GREENGARD 1-26	2354	8092	8313	221	0	4
6478	155	100	5	SWSW	LAMAR HUNT SHAIDE-FLB #1	1910	7445	7670	225	0	0
7781	155	100	16	NESE	LAMAR HUNT ROLFSTAD STATE #2	1950	7585	7788	203	0	23
6975	155	100	16	SESE	LAMAR HUNT ROLFSTAD STATE #1	1951	7565	7810	245	0	0
12375	155	100	25	SESW	SAMEDAN OIL CORP. STONY CREEK #1-25	2053	7762	7998	236	0	12
11828	155	100	29	NENW	LAMAR HUNT ROLFSTAD TRUST A-1	1900	7542	7750	208	0	0
6680	155	100	29	NESW	LAMAR HUNT ROLFSTAD #1	1913	7525	7743	218	0	3
7004	155	100	30	NESE	LAMAR HUNT TREFFERY #1	1898	7528	7747	219	0	0
7386	155	100	34	NWSW	MOSBACHER PRUET OIL CO. FRANCIS PRICE ET AL #34-1	2130	7796	8032	236	0	0
7578	155	100	34	SENW	MOSBACHER PRUET OIL CO. HEFFLEFINGER #34-1	2150	7800	8020	220	0	0
12325	155	100	35	NESE	TXP OPERATING CO. TXPOC-WALLACE #43-35	2048	7707	7940	233	0	5
12186	155	100	36	NESW	TXP OPERATING CO. TXPOC-STATE #23-36	2101	7774	8012	238	0	5
12344	155	100	36	SWNW	TXP OPERATING CO. TXPOC-STATE #12-36	2054	7730	7962	232	0	4
12319	155	100	36	SWSE	TXP OPERATING CO. TXPOC-STATE #34-36	2202	7900	8132	232	0	0
6306	155	101	4	NESW	TENNECO OIL CO. JENSEN #1-4	2186	7654	7837	183	0	0
10840	155	101	4	SESW	TENNECO OIL CO. JENSEN 2-4	2192	7647	7823	176	0	0
11704	155	101	4	SESW	TENNECO OIL CO. JENSEN 3-4	2191	7657	7838	181	0	3
6604	155	101	4	SWNE	KISSINGER PETROL. CORP. SCHWAB #7-4	2191	7677	7860	183	0	0
10145	155	101	4	W2SE	NANCE PETROL. CORP. RIEDER #1-4	2176	7657	7840	183	0	0
6642	155	101	5	NESE	TENNECO OIL CO. W. C. JENSEN ET AL #1-5	2229	7707	7888	181	0	0
10414	155	101	5	SESE	TENNECO OIL CO. WINTER-LESNICK #2-5	2165	7635	7817	182	0	0
10647	155	101	5	SESE	TENNECO OIL CO. WINTER-LESNICK #3-5R	2174	7627	7817	190	0	3
6757	155	101	5	SESW	TENNECO OIL CO. CLARK #1-5	2203	7697	7882	185	0	3
6876	155	101	6	SESE	TENNECO OIL CO. WICKS #3-6	2243	7735	7923	188	0	5
10837	155	101	8	NENE	TENNECO OIL CO.-ERMD ALLISON 2-8	2207	7665	7860	195	0	4
6806	155	101	8	NWNE	TENNECO OIL CO. BOOKE #1-8	2192	7668	7850	182	0	0
8694	155	101	9	NWNE	NUCORP ENERGY, INC. RIEDER #2	2136	7610	7793	183	0	0
8426	155	101	9	NWNW	NUCORP ENERGY, INC. RIEDER #1	2143	7623	7806	183	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
12396	155	101	11	NESW	DEPCO, INC. LUKENBILL - STATE #1	2143	7690	7885	195	0	0
10653	155	101	11	NWNW	ATLANTIC RICHFIELD CO. (ARCO) ARCO REIDER #1-11	2059	7598	7785	187	0	0
11346	155	101	24	NWSE	SUPERIOR OIL CO. PETERSON FLB #24-33	1935	7535	7750	215	0	4
12259	155	101	27	SWSW	CHEVRON USA, INC. STRAND #27-14	2143	7753	7960	207	0	4
11689	155	101	30	NENW	SONAT EXPLOR. CO. GLEN 1-30	2248	7790	7977	187	0	0
7669	155	102	5	NENW	TIGER OIL CO. HANSON #21-5	2344	7700	7897	197	0	7
8571	155	102	9	SWNW	AL-AQUITAINE EXPLOR., LTD. JORGENSON #1-9	2309	7700	7872	172	0	0
11182	155	102	23	SESE	ADOBE OIL & GAS CORP. NORDTUG 44-23	2170	7660	7861	201	0	0
7692	155	102	24	SWSE	DEPCO, INC. MORTENSON #34-24	2192	7700	7890	190	0	0
8914	155	103	14	SENW	PUMA PETROL. CO. LEE #1-14	2289	7720	7877	157	0	0
8867	155	104	15	SWNE	SUN OIL CO. HOROB #1-15	2404	7710	7876	166	0	0
8587	155	104	24	NENE	PUMA PETROL. CO. STEDMEN #1-24	2347	7735	7887	152	0	0
1438	156	86	6	NWSW	LOWELL J. WILLIAMSON, INC. PETER BERNHARD PEDERSON #1	2104	0	0	0	0	0
7042	156	87	12	SWSE	INEXCO OIL CO. BIRDSALL #1-12	2146	0	0	0	0	0
4216	156	87	36	NENE	PEL-TEX, INC. & CONOCO JOHNSON #1	2263	0	0	0	0	0
3581	156	88	5	NWNW	PAN AMERICAN PETROL. CORP. NELS J. KJELLBERG #1	2268	0	0	0	0	0
9983	156	88	8	NENE	DOME PETROL. CORP. SWENNINGSON #1-8	2292	6173	6187	14	0	0
1223	156	88	27	SWSE	ESTATE OF W. G. HETIS W. F. BAUER #1	2180	6100	6145	45	0	0
9758	156	89	4	NENE	DOME PETROL. CORP. BIERI #1-4	2212	6217	6300	83	0	0
7847	156	90	31	SWSE	JUNIPER PETROL. CORP. DAVIDSON #1	2280	6707	6905	198	0	30
7626	156	90	32	SWSW	JUNIPER PETROL. CORP. GERNAND #1	2255	6665	6900	235	0	35
9757	156	91	12	SESE	DOME PETROL. CORP. HOWELL #1-12	2203	6535	6725	190	0	16
6515	156	91	17	NWNW	BWAB, INC. JAHA #17-11	2340	6885	7065	180	0	0
10684	156	91	33	SWNE	MILESTONE PETROL., INC. BN #32-33	2183	6818	7058	240	0	43
11505	156	91	33	SWSW	BROOKS EXPLOR., INC. MCNALLEY 1-33	2246	6920	7090	170	0	15
9596	156	91	34	SENE	TRUE OIL CO. JACOBS STATE #42-34	2217	6758	6992	234	0	55
9950	156	91	34	SESW	BROOKS EXPLOR., INC. HAGEN #1-34	2238	6855	7085	230	0	20
6635	156	91	36	SESE	BWAB, INC. HOVDA #36-44	2255	6720	6887	167	0	0
11904	156	92	1	SENW	HNG OIL CO. KALLEVIG 1 1	2268	6850	7058	208	0	43
9326	156	92	1	SWNW	GULF OIL CORP. JUMA 1-1-1D	2266	6860	7063	203	0	40
592	156	92	14	SENW	WILLIAM HERBERT HUNT ERVIN G. HORNE #1	2322	7003	7250	247	0	6
9416	156	92	24	NENE	GULF OIL CORP. NELSON #1-24-2B	2342	7000	7190	190	0	0
5333	156	93	26	SESE	SHELL OIL CO. MORROW #44X-26	2376	7350	7552	202	0	7
5088	156	93	35	NENW	SHELL OIL CO. L. TEXEL #21-35	2409	7390	7615	225	0	8
9373	156	93	36	NWSE	PENNZOIL EXPLOR. & PROD. CO. ROSS #36-32	2449	7400	7615	215	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
11939	156	94	2	NWSE	LOUISIANA LAND & EXPLOR. CO. ENGER 33-2 1	2198	7115	7351	236	0	0
11716	156	94	5	NWNW	PINTAIL PETROL., LTD. NESET 1	2282	7030	7260	230	0	7
7741	156	94	28	SWSW	KISSINGER PETROL. CORP. ORTLOFF #13-28	2331	7317	7555	238	0	6
7699	156	95	2	NENW	DOME PETROL. CORP. JOYCE #2-2	2264	6848	7087	239	0	0
7905	156	95	2	NWSW	DOME PETROL. CORP. HERSEL #3-2	2300	6880	7145	265	0	15
7333	156	95	2	SWNE	DOME PETROL. CORP. JOYCE #1-2	2287	6857	7110	253	0	10
3385	156	95	2	SWSE	CONTINENTAL BAKKEN ET AL #1	2249	6827	7055	228	0	25
106	156	95	3	NENW	AMERADA PETROL. CORP. OLIVER I. HERSEL #1	2321	6855	7075	220	0	10
136	156	95	3	SWNW	AMERADA PETROL. CORP. INGA HERSEL #1	2311	6845	7117	272	0	15
146	156	95	4	NENE	AMERADA PETROL. CORP. PETER LARSON #1	2301	6825	7085	260	0	12
711	156	95	4	SWNE	AMERADA PETROL. CORP. INGA HERSEL #2	2326	6830	7120	290	0	17
150	156	95	4	SWSW	AMERADA PETROL. CORP. R. H. SHELTON #1	2275	6810	7060	250	0	7
198	156	95	8	NESE	AMERADA PETROL. CORP. DAVIDSON "A" #1	2329	6850	7125	275	0	10
124	156	95	8	SWNW	AMERADA PETROL. CORP. OLE H. JOHNSON #1	2315	6847	7105	258	0	0
297	156	95	8	SWSE	AMERADA PETROL. CORP. H. E. DAVIDSON "A" #2	2344	6850	7110	260	0	4
382	156	95	8	SWSW	AMERADA PETROL. CORP. E. C. DAVIDSON "A" UNIT 1	2353	6874	7135	261	0	0
139	156	95	9	NENE	AMERADA PETROL. CORP. EBBA HOVEY #1	2310	6820	7070	250	0	15
210	156	95	9	NESE	AMERADA PETROL. CORP. DENA SVOR #2	2294	6750	7050	300	110	110
595	156	95	9	NESW	AMERADA PETROL. CORP. DENA SVOR #4	2310	6810	7088	278	0	10
514	156	95	9	SENW	AMERADA PETROL. CORP. P. LARSON "A" T 2 #2	2302	6810	7095	285	0	20
243	156	95	9	SWNE	AMERADA PETROL. CORP. PETER LARSON "A" (TR. 2) 1	2301	6783	7065	282	0	15
379	156	95	9	SWSE	AMERADA PETROL. CORP. DENA SVOR #3	2319	6780	7055	275	75	75
112	156	95	9	SWSW	AMERADA PETROL. CORP. DENA SVOR #1	2336	6818	7090	272	0	10
179	156	95	10	NWSE	AMERADA PETROL. CORP. NYLANDER #6	2295	6805	7085	280	0	0
103	156	95	10	NWSW	AMERADA PETROL. CORP. P. WALLENTINSON #1	2308	6795	7080	285	0	15
73	156	95	10	SENE	AMERADA PETROL. CORP. ANNA NYLANDER #1	2295	6842	7138	296	0	0
294	156	95	10	SESW	AMERADA PETROL. CORP. PETER WALLENTINSON UNIT #2	2307	6800	7092	292	0	0
221	156	95	10	SWNW	AMERADA PETROL. CORP. INEZ PIERSON #1	2307	6828	7100	272	0	12
6569	156	95	11	NWSE	MCCORMICK OIL & GAS WALLEN #1	2330	6890	7163	273	0	0
67	156	95	14	SENW	AMERADA PETROL. CORP. PETER LARSON #1	2353	6900	7137	237	0	7
249	156	95	14	SWNE	U. S. SMELTING REFINING & MINING CO. A. E. MOE #1	2353	6930	7171	241	0	12
123	156	95	15	NWNE	HUNT OIL CO. MARVIN NYLANDER #3	2316	6835	7115	280	0	8
177	156	95	15	NWNW	HUNT OIL CO. MARVIN NYLANDER #4	2308	6802	7077	275	0	6
54	156	95	15	SENW	HUNT OIL CO. MARVIN NYLANDER #2	2303	6810	7090	280	0	9
51	156	95	15	SWNE	AMERADA PETROL. CORP. CLIFFORD #1	2317	6836	7060	224	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
934	156	95	15	SWNW	AMERADA PETROL. CORP. CLIFFORD NYLANDER #2	2343	6885	7150	265	0	0
1045	156	95	15	SWSE	AMERADA PETROL. CORP. EDWIN HEEN #2	2332	6870	7135	265	0	0
56	156	95	15	SWSW	AMERADA PETROL. CORP. EDWIN HEEN #1	2327	6830	7105	275	0	10
242	156	95	16	NENE	AMERADA PETROL. CORP. N. D. A UNIT #5	2312	6775	7072	297	0	7
182	156	95	16	NENW	AMERADA PETROL. CORP. N D A #4	2329	6790	7063	273	0	55
42	156	95	16	NESE	AMERADA PETROL. CORP. N. DAKOTA STATE "A"	2332	6817	7090	273	0	0
790	156	95	16	NESW	AMERADA PETROL. CORP. N D A #7	2346	6807	7080	273	0	35
7954	156	95	16	SESE	AMERADA HESS CORP. B. L. M. U. V-25	2345	6830	7110	280	0	4
1385	156	95	16	SESW	AMERADA PETROL. CORP. N.D. "A" U. #9	2360	6840	7100	260	0	20
1014	156	95	16	SWNE	AMERADA PETROL. CORP. N. DAKOTA "A" #8	2334	6800	7077	277	0	5
443	156	95	16	SWNW	AMERADA PETROL. CORP. N.DAKOTA "A" #6	2365	6828	7095	267	0	20
181	156	95	16	SWSE	AMERADA PETROL. CORP. N D "A" #3	2362	6830	7095	265	0	0
163	156	95	16	SWSW	AMERADA PETROL. CORP. N.D. "A" UNIT 2	2360	6845	7100	255	0	6
388	156	95	17	NENE	AMERADA PETROL. CORP. ANNA J. NELSON U. #2	2352	6827	7078	251	0	5
152	156	95	17	NENW	AMERADA PETROL. CORP. ERNEST C. DAVIDSON #1	2378	6865	7120	255	0	7
325	156	95	17	NESW	AMERADA PETROL. CORP. A. M. PETERSON #3	2403	6855	7085	230	0	6
4382	156	95	17	NWSE	AMERADA PETROL. CORP. BEAVER LODGE MAD. U. Q 26X	2393	6857	7124	267	0	6
88	156	95	17	SESE	AMERADA PETROL. CORP. H. BAKKEN #2	2378	6845	7110	265	0	5
1636	156	95	17	SESW	AMERADA PETROL. CORP. PETERSON DAVIDSON U. #1	2401	6870	7100	230	0	10
3901	156	95	17	SESW	AMERADA PETROL. CORP. BEAVER LODGE MAD. U. P 25	2421	6868	7120	252	0	5
97	156	95	17	SWNE	AMERADA PETROL. CORP. ANNA J. NELSON #1	2378	6845	7107	262	0	5
2092	156	95	17	SWNE	AMERADA PETROL. CORP. NELSON BAKKEN U. #1	2373	6857	7120	263	0	5
296	156	95	17	SWNW	AMERADA PETROL. CORP. A. M. PETERSON #2	2378	6853	7098	245	0	0
204	156	95	17	SWSW	AMERADA PETROL. CORP. A. M. PETERSON #1	2395	6845	7092	247	0	0
3468	156	95	17	SWSW	AMERADA PETROL. CORP. BEAVER LODGE DEV. U. I 315	2395	6850	7100	250	0	0
647	156	95	18	NENE	AMERADA PETROL. CORP. A. M. PETERSON #4	2356	6885	7130	245	0	0
1035	156	95	18	NENW	AMERADA PETROL. CORP. PETER KVAM UNIT #2	2355	6905	7147	242	0	0
269	156	95	18	NESE	AMERADA PETROL. CORP. DENA SVOR #1 TRACT 2	2362	6835	7083	248	0	4
675	156	95	18	NESW	HUNT OIL CO.-AMERADA EMORE A. ANDERSON #1	2341	6850	7083	233	0	0
2149	156	95	18	SENE	AMERADA PETROL. CORP. KUAM PETERSON SOAR UNIT #1	2360	6888	7127	239	0	0
500	156	95	18	SWNE	AMERADA PETROL. CORP. PETER KVAM UNIT #1	2347	6858	7100	242	0	0
479	156	95	18	SWSE	AMERADA PETROL. CORP. DENA SVAR TRACT 2 #2	2363	6847	7080	233	0	6
1075	156	95	18	SWSW	AMERADA PETROL. CORP. LARS KVAM "B" #2	2360	6885	7125	240	0	0
405	156	95	19	NENE	AMERADA PETROL. CORP. LARS KVAM TRACT 1 #3	2389	6845	7092	247	0	0
1039	156	95	19	NENW	AMERADA PETROL. CORP. LARS KVAM "B" #1	2384	6880	7125	245	0	7

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
140	156	95	19	NESE	AMERADA PETROL. CORP. OLE N. HEGGESTAD #1	2397	6860	7103	243	0	0
153	156	95	19	NESW	AMERADA PETROL. CORP. JESSIE BURCH #1	2403	6890	7150	260	0	0
2344	156	95	19	NWSW	AMERADA PETROL. CORP. BURCH-KVAM U. #1	2405	6892	7155	263	0	4
254	156	95	19	SWNE	AMERADA HESS CORP. LARS KVAM TI # 2	2397	6880	7122	242	0	0
258	156	95	19	SWNW	AMERADA PETROL. CORP. EDWARD KVAM #1	2387	6905	7170	265	0	4
268	156	95	19	SWSE	AMERADA PETROL. CORP. LARS KVAM TRACT 1 U. #1	2385	6855	7115	260	0	0
404	156	95	19	SWSW	AMERADA PETROL. CORP. JESSIE BURCH #2	2396	6885	7153	268	0	0
317	156	95	20	NENW	AMERADA PETROL. CORP. PETER KVAM #2	2429	6887	7145	258	0	0
311	156	95	20	NESE	AMERADA PETROL. CORP. H. M. BAKKEN 5	2341	6927	7197	270	0	5
102	156	95	20	NESW	AMERADA PETROL. CORP. LARS KVAM #1	2435	6910	7160	250	0	0
131	156	95	20	SWNE	AMERADA PETROL. CORP. H. M. BAKKEN #4	2458	6945	7202	257	0	4
116	156	95	20	SWNW	AMERADA PETROL. CORP. PETER KVAM # 1	2418	6870	7127	257	0	0
324	156	95	20	SWSE	AMERADA PETROL. CORP. LARS KUAM #1 "A"	2448	6955	7210	255	0	7
289	156	95	20	SWSW	AMERADA PETROL. CORP. OLE HEGGESTAD #2	2411	6894	7136	242	0	0
80	156	95	21	NENE	AMERADA PETROL. CORP. NELS ODEGAARD #1-A	2354	6840	7125	285	0	0
731	156	95	21	NESE	AMERADA PETROL. CORP. NELS ODEAARD "B" #2	2393	6905	7198	293	0	4
444	156	95	21	NESW	AMERADA PETROL. CORP. NELS ODEGAARD #4	2391	6897	7167	270	30	30
117	156	95	21	NWNW	AMERADA PETROL. CORP. WILLARD E. BURCH #1	2382	6855	7140	285	20	20
424	156	95	21	SENW	AMERADA PETROL. CORP. WILLARD BURCH #2	2373	6850	7110	260	0	0
429	156	95	21	SWNE	AMERADA PETROL. CORP. ODEGAARD A #3	2360	6850	7137	287	0	5
7853	156	95	21	SWNW	AMERADA HESS CORP. B. L. M. U. S-23	2396	6890	7155	265	28	28
90	156	95	21	SWSE	AMERADA PETROL. CORP. NELS ODEAARD "B" #1	2423	6945	7220	275	23	23
211	156	95	21	SWSW	HUNT OIL CO. H. BAKKEN #1	2465	6967	7245	278	0	5
219	156	95	22	NWNW	AMERADA PETROL. CORP. TOM HEEN #1	2346	6870	7092	222	0	0
428	156	95	22	NWSW	AMERADA PETROL. CORP. TOM L. HEEN #2	2392	6937	7246	309	0	0
6915	156	95	26	SWSW	KISSINGER PETROL. CORP. OLSON #13-26	2411	7122	7360	238	0	10
190	156	95	28	NENW	HUNT OIL CO. M. C. FRISINGER #1	2473	6985	7263	278	0	10
168	156	95	28	NWNE	AMERADA PETROL. CORP. L. M. OSBORN #1	2480	7010	7287	277	0	0
890	156	95	28	NWSE	AMERADA PETROL. CORP. ANDREW SKREDE #1	2418	7000	7277	277	0	0
417	156	95	28	NWSW	AMERADA PETROL. CORP. CARL FRISINGER #1	2463	7000	7272	272	0	10
191	156	95	28	SWNW	HUNT OIL CO. M. C. FRISINGER #2	2481	7000	7275	275	0	10
788	156	95	28	SWSW	AMERADA PETROL. CORP. CARL FRISINGER #2	2450	7000	7273	273	0	0
372	156	95	29	NENE	AMERADA PETROL. CORP. H. DOMY #2	2475	6990	7255	265	0	10
183	156	95	29	NENW	AMERADA PETROL. CORP. HARVEY R. DOMY # 1	2456	6962	7213	251	0	0
192	156	95	29	NESE	HUNT OIL CO. M. C. FRISINGER #3	2488	7015	7290	275	0	8

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
480	156	95	29	NESW	AMERADA PETROL. CORP. JENS KVAM #4	2409	6940	7195	255	0	5
396	156	95	29	SWNE	AMERADA PETROL. CORP. JENS KVAM #3	2444	6965	7230	265	0	0
218	156	95	29	SWNW	AMERADA PETROL. CORP. JENS KVAM #2	2396	6887	7150	263	0	5
351	156	95	29	SWSW	AMERADA PETROL. CORP. H. G. ONSTAD #3	2401	6900	7167	267	0	6
137	156	95	30	NENE	AMERADA PETROL. CORP. JENS KUAM #1	2389	6853	7115	262	0	7
101	156	95	30	NESE	AMERADA PETROL. CORP. H. G. ONSTAD #1	2379	6890	7135	245	0	0
418	156	95	30	NESW	AMERADA PETROL. CORP. TELFORD HERFINDAHL #2	2401	6882	7145	263	0	0
3842	156	95	30	NWNE	AMERADA PETROL. CORP. BEAVER LODGE DEV. U. H 312I	2376	6840	7105	265	0	0
414	156	95	30	SWNE	AMERADA PETROL. CORP. LARS KUAM T 1 WELL #1	2362	6820	7090	270	0	0
121	156	95	30	SWNW	HUNT OIL CO. OLAUS HERFINDAHL #1	2369	6855	7130	275	0	7
812	156	95	30	SWSE	AMERADA PETROL. CORP. H. G. ONSTAD #4	2374	6860	7127	267	0	0
69	156	95	30	SWSW	AMERADA PETROL. CORP. TELFORD HERFINDAHL #1	2356	6865	7110	245	0	0
2501	156	95	30	SWSW	AMERADA PETROL. CORP. HERFINDAHL IVERSON U. #1	2392	6882	7140	258	0	0
331	156	95	31	NENE	AMERADA PETROL. CORP. P. H. DILLARD #2	2346	6850	7115	265	0	0
442	156	95	31	NESW	AMERADA PETROL. CORP. CLARENCE IVERSON "B" # 2	2350	6835	7105	270	0	0
55	156	95	31	NWNW	HUNT OIL CO. SIVERT RYE #1	2350	6828	7110	282	0	0
68	156	95	31	SENE	AMERADA PETROL. CORP. I. M. RAMBERG #1	2335	6863	7125	262	0	0
119	156	95	31	SENW	HUNT OIL CO. SIVERT RYE #2	2336	6847	7115	268	0	0
272	156	95	31	SESE	AMERADA PETROL. CORP. IDA MAE RAMBERG #2	2299	6805	7073	268	0	0
35	156	95	31	SWNE	AMERADA PETROL. CORP. PALMER H. DILLAND #1	2329	6847	7110	263	0	0
5365	156	95	31	SWNW	AMERADA PETROL. CORP. BEAVER LODGE DEV. UNIT G 310	2349	6842	7120	278	0	5
189	156	95	31	SWSW	AMERADA PETROL. CORP. C. IVERSON B-1	2356	6845	7110	265	0	0
2173	156	95	31	SWSW	AMERADA PETROL. CORP. RYE IVERSON #1	2390	6890	7153	263	0	0
214	156	95	32	NENW	AMERADA PETROL. CORP. JOEL B. RAMBERT (TR. 2) 1	2388	6930	7192	262	0	0
679	156	95	32	NESE	AMERADA PETROL. CORP. RAMBERG BENSON #1	2376	6955	7208	253	0	0
187	156	95	32	NESW	AMERADA PETROL. CORP. A CHRISTENSON #1	2325	6880	7145	265	0	0
483	156	95	32	SWNE	AMERADA PETROL. CORP. A. CHRISTENSON #2	2402	6960	7225	265	0	0
159	156	95	32	SWNW	AMERADA PETROL. CORP. H. G. ONSTAD #2	2332	6865	7130	265	0	0
741	156	95	32	SWSE	AMERADA PETROL. CORP. JOEL RAMBURG T 1 #2	2334	6922	7175	253	0	0
169	156	95	32	SWSW	AMERADA PETROL. CORP. JOEL RAMBERG #1	2310	6845	7100	255	0	0
44	156	95	33	NENE	AMERADA PETROL. CORP. NELS ODEGAARD #1	2378	7020	7290	270	0	0
841	156	95	33	NENW	AMERADA PETROL. CORP. JOEL RAMBERG T 3 #1	2415	7006	7270	264	0	15
799	156	95	33	SWNW	AMERADA PETROL. CORP. M. P. BENSON #1	2443	7028	7300	272	0	0
8645	156	96	2	NWSW	DONALD C. SLAWSON MOE #2-1	2460	7055	7300	245	0	45
48	156	96	7	NESE	CHAMPLIN PETROL. CO. TANK #1	2311	7127	7360	233	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
12305	156	96	13	NENE	SUN EXPLOR. & PROD. CO. NELS ANDERSON #1	2399	6963	7195	232	0	0
1296	156	96	13	NESE	AMERADA PETROL. CORP. NELS ANDERSON #1	2358	6900	7137	237	0	0
7603	156	96	17	SWNW	READING & BATES PETROL. ERICKSON STATE #1	2268	7087	7312	225	0	5
2555	156	96	23	SESW	AMERADA PETROL. CORP. WOLLA KNUTSON U. #1	2345	6922	7192	270	0	5
1856	156	96	24	NESW	AMERADA PETROL. CORP. P. DILLARD & J. KNUTSON U. #1	2353	6910	7177	267	0	15
501	156	96	24	SESE	AMERADA PETROL. CORP. PEDER E. WOLLA # 1	2383	6893	7152	259	0	8
225	156	96	25	NENE	AMERADA PETROL. CORP. R. WANBERG #1	2380	6892	7145	253	0	0
718	156	96	25	NWSE	AMERADA PETROL. CORP. LARS FRETLAND #3	2414	6920	7165	245	0	0
59	156	96	25	SESE	AMERADA PETROL. CORP. L. FRETLAND #1	2386	6890	7142	252	0	0
688	156	96	25	SESW	AMERADA PETROL. CORP. LARS FRETLAND #2	2378	6845	7117	272	0	0
1998	156	96	25	SESW	HUNT OIL CO. DILLAND + FRETLUND #1	2396	6897	7138	241	0	0
1534	156	96	26	SENE	AMERADA PETROL. CORP. HERFINDAHL KVAM U. #1	2340	6845	7120	275	0	0
63	156	96	26	SESE	AMERADA PETROL. CORP. SOPHIE HERFINDAHL #1	2341	6813	7090	277	0	0
5315	156	96	26	SESE	AMERADA PETROL. CORP. BEAVER LODGE DEV. UNIT D 311	2357	6832	7108	276	0	7
2091	156	96	26	SESW	AMERADA PETROL. CORP. DAVIDSON-WALLA UNIT #1	2343	6850	7125	275	0	7
10493	156	96	32	SWSW	UNIVERSAL RES. CORP. KERBAUGH STATE #1-32	2134	6875	7140	265	0	32
141	156	96	34	NESE	AMERADA PETROL. CORP. JULIUS ULVEN #1	2221	6753	7003	250	0	0
1514	156	96	34	SENE	AMERADA PETROL. CORP. ULVEN UNIT #1	2286	6875	7135	260	0	13
185	156	96	35	NESE	AMERADA PETROL. CORP. H. E. DAVIDSON #1	2297	6750	7028	278	0	0
5912	156	96	35	NESW	AMERADA PETROL. CORP. B. L. O. U. #6	2294	6773	7013	240	0	15
2150	156	96	35	SENE	AMERADA PETROL. CORP. HERFINDAHL & DAVIDSON #1	2324	6817	7067	250	0	0
5429	156	96	35	SESE	AMERADA PETROL. CORP. B. L. D. U. D 309	2288	6738	7003	265	0	0
1820	156	96	35	SESW	AMERADA PETROL. CORP. H. E. DAVIDSON "B" #3	2301	6783	7040	257	0	20
309	156	96	35	SWNE	AMERADA PETROL. CORP. SOPHIE HERFINDAHL A #1	2314	6805	7058	253	0	0
870	156	96	35	SWSE	AMERADA PETROL. CORP. H. E. DAVIDSON #2	2293	6743	7005	262	0	10
982	156	96	35	SWSW	AMERADA PETROL. CORP. H. E. DAVIDSON "B" #2	2283	6770	7010	240	0	0
5069	156	96	36	C NW	AMERADA PETROL. CORP. B. L. O. U. #5	2345	6815	7082	267	0	0
45	156	96	36	NENE	AMERADA PETROL. CORP. JOSIE KNUTSON #1	2366	6875	7120	245	0	0
244	156	96	36	NENW	AMERADA PETROL. CORP. LARS KVAM TRACT 2 #1	2352	6820	7090	270	0	0
323	156	96	36	NESE	AMERADA PETROL. CORP. C. IVERSON C#1	2341	6840	7085	245	0	0
494	156	96	36	NESW	AMERADA PETROL. CORP. MONS ANTONSON #2	2329	6804	7060	256	0	0
1768	156	96	36	SENE	AMERADA PETROL. CORP. KNUTSON & IVERSON UNIT #1	2361	6863	7117	254	0	0
5408	156	96	36	SENW	AMERADA PETROL. CORP. B. L. D. U. E 310	2339	6820	7070	250	0	0
5427	156	96	36	SESE	AMERADA HESS CORP. BLDU F 309	2335	6817	7088	271	0	0
420	156	96	36	SWNE	AMERADA PETROL. CORP. JOSIE KNUTSON #2	2354	6840	7100	260	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
730	156	96	36	SWNW	AMERADA PETROL. CORP. LARS KVAM TRACT 2 #2	2333	6817	7067	250	0	0
497	156	96	36	SWSE	AMERADA PETROL. CORP. C. IVERSON C#2	2321	6785	7055	270	0	0
113	156	96	36	SWSW	AMERADA PETROL. CORP. MONS ANTONSON #1	2309	6783	7015	232	0	0
6114	156	97	6	NENW	SMOKEY OIL CO., INC. WHEELER #21-6	2390	7690	7895	205	0	0
9783	156	97	11	NESW	TOTAL PETROL., INC. STATE #1-11	2296	7280	7500	220	0	0
8413	156	97	14	SENW	DEPCO, INC. WITTROCK #22-14	2255	7290	7503	213	0	7
547	156	97	27	NENW	WILLIAM HERBERT HUNT B. H. WEYRUCK #1	2272	7510	7727	217	0	4
9775	156	97	30	NWSE	GETTY OIL CO. GORDON E. TANK #30-10	2407	7865	8073	208	0	3
3406	156	99	10	NENE	HUNT OIL CO. EMELIA K. ERICKSON #1	2281	7810	7973	163	0	0
11965	156	99	10	NENE	DEPCO, INC. ERICKSON 41-10	2274	7800	7965	165	0	0
12131	156	99	15	SWSW	DEPCO, INC. HERREID #14-15	2339	7860	8042	182	0	0
12153	156	99	29	SESW	CENERGY EXPLOR. CO. WESTPHAL #24-29	2229	7805	8010	205	0	3
12145	156	99	30	SWNE	DEPCO, INC. C. ALEXANDER #32-30	2300	7829	8040	211	0	0
12099	156	99	30	SWNW	DEPCO, INC. THOM 12-30	2287	7835	8055	220	0	0
12067	156	99	30	SWSE	DEPCO, INC. STRANG TRUST 34-30	2272	7855	8058	203	0	0
11949	156	99	30	SWSW	DEPCO, INC. CHRISTOPHERSON 14-30	2287	7852	8068	216	0	0
12161	156	99	31	NESE	LADD PETROL. CORP. BUGGE #43-31	2215	7812	8030	218	0	4
11950	156	99	31	NESW	DEPCO, INC. THOM 24-31	2237	7798	8014	216	0	3
8861	156	99	31	SENW	AL-AQUITAINE EXPLOR., LTD. STONEY CREEK ALAQ 31-156-99 HIEPLER 1-31	2250	7827	8045	218	0	3
11861	156	99	31	SWNE	SUPERIOR OIL CO. HIEPLER 31-32	2228	7828	8025	197	0	0
12098	156	99	32	NWNW	CENERGY EXPLOR. CO. WESTPHAL 11-32	2215	7798	8005	207	0	0
12144	156	99	33	NESE	DEPCO, INC. HOLDREDGE #43-33	2182	7805	8023	218	0	0
12108	156	99	33	SENE	DEPCO, INC. BACKEN #42-33	2184	7789	7990	201	0	0
12182	156	99	33	SENW	DEPCO, INC. CARPENTER #12-33	2169	7772	7983	211	0	0
12170	156	99	34	SENW	DEPCO, INC. BJELLA #22-34	2204	7824	8028	204	0	0
12255	156	99	34	SESW	DEPCO, INC. A. BJELLA #24-34	2151	7790	8015	225	0	28
9264	156	100	6	SWNW	NUCORP ENERGY, INC. DANIEL #1	1921	7307	7475	168	0	0
12105	156	100	13	SENW	DEPCO, INC. WASHBURN 22-13	2198	7630	7828	198	0	0
12090	156	100	14	SWSW	DEPCO, INC. NELSON 14-14	2097	7568	7760	192	0	0
9330	156	100	16	NESW	NUCORP ENERGY, INC. STATE 16 #1	2017	7480	7664	184	0	0
11215	156	100	19	NWNW	ATLANTIC RICHFIELD CO. ARCO CARTIER 1-19	1903	7405	7585	180	0	0
11987	156	100	21	SESW	LADD PETROL. CORP. SMITH 24-21	1971	7485	7672	187	0	3
12254	156	100	22	NESE	DEPCO, INC. IRGENS #43-22	2098	7600	7798	198	0	0
11941	156	100	22	SENE	DEPCO, INC. ALEXANDER #42-22	2106	7598	7790	192	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
11139	156	100	23	NWNW	ATLANTIC RICHFIELD CO. ARCO NELSON 1-23	2129	7603	7798	195	0	0
11993	156	100	23	NWSE	DEPCO, INC. NELSON #33-23	2194	7685	7882	197	0	3
11937	156	100	23	SWNE	DEPCO, INC. ISAKSON 32-23	2170	7649	7842	193	0	0
12038	156	100	24	SWNW	DEPCO, INC. ISAKSON NO. 12-24	2152	7658	7858	200	0	0
12143	156	100	24	SWSE	DEPCO, INC. BRYANT #34-24	2240	7767	7977	210	0	7
12112	156	100	24	SWSW	DEPCO, INC. NELSON BROS. #14-24	2222	7732	7933	201	0	4
12069	156	100	25	NESW	DEPCO, INC. NELSON 23-25	2259	7790	8003	213	0	0
12060	156	100	25	NWNW	CSX OIL & GAS CORP. NELSON 11-25	2246	7760	7970	210	0	0
11996	156	100	25	SESE	TEXAS GAS EXPLOR. CORP. NELSON 44-25	2304	7855	8073	218	0	0
12096	156	100	25	SWNE	CSX OIL & GAS CORP. NELSON 32-25	2295	7825	8048	223	0	4
10931	156	100	26	SWSW	ATLANTIC RICHFILED CO. ARCO HARMON 1-26	2165	7686	7892	206	0	4
11098	156	100	27	NESE	ATLANTIC RICHFIELD CO. (ARCO) ARCO IRGENS 3-27	2098	7645	7840	195	0	0
10646	156	100	27	NESW	ATLANTIC RICHFIELD CO. (ARCO) IRGENS #1-27	2043	7565	7760	195	0	0
11229	156	100	27	SENW	SUPERIOR OIL CO. JOHNSON 27-22	2065	7587	7786	199	0	0
10983	156	100	28	NESE	ATLANTIC RICHFIELD CO. ARCO METZGER 1-28	2028	7562	7754	192	0	0
11928	156	100	28	NESW	DEPCO, INC. METZGER 23-28	1948	7485	7674	189	0	0
11242	156	100	28	SENW	ARCO OIL & GAS CO. ARCO ARNT 4-28	1942	7475	7668	193	0	0
11933	156	100	28	SWNE	DEPCO, INC. ARTHUR SMITH 33-28	1975	7494	7690	196	0	0
12313	156	100	29	E2NE	DEPCO, INC. ARTHUR SMITH #42-29	1922	7460	7648	188	0	0
12224	156	100	32	SENE	DEPCO, INC. METZGER #42-32	1917	7470	7658	188	0	0
11188	156	100	34	NENW	ATLANTIC RICHFIELD CO. ARCO METZGER 2-34	2119	7665	7860	195	0	3
11994	156	100	35	NENW	DEPCO, INC. MILTON SMITH #21-35	2176	7725	7932	207	0	0
11954	156	100	36	SENE	TEXAS GAS EXPLOR. CORP. TGEC/NELSON 42-36	2285	7843	8060	217	0	0
3235	156	101	16	NWNW	SUN OIL CO. STATE LEASE #1	2168	7580	7750	170	0	0
12167	156	101	24	SESW	TEXACO, INC. L. E. JOHNSON #1	2048	7545	7727	182	0	3
10707	156	101	30	NWNW	GULF OIL CORP. NASNER #1-30-1A	2256	7700	7877	177	0	0
11190	156	101	36	NWSE	ATLANTIC RICHFIELD CO. ARCO STATE 1-36	2004	7480	7710	230	0	12
11932	156	102	11	SWSW	LADD PETROL. CORP. FJERSTAD 14-11	2138	7510	7623	113	0	0
12189	156	102	11	SWSW	LADD PETROL. CORP. FJERSTAD #14-11 A	2134	7463	7604	141	0	0
7054	156	102	14	NENW	PATRICK PETROL. CO. FEDJE #1	2151	7445	7630	185	0	0
12378	156	102	14	SWNE	KOCH EXPLOR. CO. FEDJE #32-14	2144	7405	7640	235	0	10
4916	156	102	29	NESW	LAMAR HUNT PAUL HARSTAD #1	2408	7785	7950	165	0	0
10908	156	102	30	NWSE	SUPERIOR OIL CO. HARSTAD 30-33	2387	7740	7913	173	0	0
8956	156	103	2	SESW	PUMA PETROL. CO. MACMASTER #1-2	2328	7505	7672	167	0	0
4618	156	103	17	NENW	AMERADA PETROL. CORP. NILS TROGSTAD #1	2413	7525	7700	175	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
6789	156	103	23	SWSW	ARGONAUT ENERGY CORP. BARKIE #1	2389	7650	7810	160	0	0
11097	156	103	26	SWSW	SUPERIOR OIL CO. HAPID-SEATON 26-14	2402	7693	7854	161	0	0
8597	156	103	30	SWNW	DOME PETROL. CORP. SANDVIK #1-30	2506	7748	7907	159	0	0
5762	156	103	32	SENW	TRUE OIL CO. AAFEDT #22-32	2433	7713	7852	139	0	0
9234	156	104	12	NENW	RAYMOND T. DUNCAN SUNDET #2-12	2480	7645	7805	160	0	0
7356	156	104	12	SENE	PATRICK PETROL. CO. SUNDET #1-12	2437	7595	7757	162	0	0
10090	156	104	15	SWNE	LOUISIANA LAND & EXPLOR. CO. OLSON #32-15	2459	7663	7793	130	0	0
10107	156	104	35	NWNE	GETTY OIL CO. BULL #35-2	2450	7877	8030	153	0	0
11554	157	88	17	SENE	CHALLENGER MINERALS, INC. PULLEN 42-17	2319	0	0	0	0	0
12274	157	88	30	SWSE	COASTAL OIL & GAS CORP. SARAH BRUHN #1	2273	0	0	0	0	0
3575	157	89	3	NWNE	PAN AMERICAN PETROL. CORP. LEONARD J. GOETTLE #1	2289	0	0	0	0	0
9478	157	89	18	SESE	DOME PETROL. CORP. HALVORSON #1-18	2257	6264	6313	49	0	0
528	157	89	25	NWNE	WILLIAM HERBERT HUNT L. C. ANDERSON #1	2271	0	0	0	0	0
6677	157	90	14	NESE	TRUE OIL CO. HALVERSON #33-14	2305	6353	6455	102	0	20
1406	157	90	19	NESW	CALVERT DRILLING CO. SARAS SALO #1	2384	6650	6815	165	0	17
11016	157	90	20	NWNE	JN OIL & GAS JN-HILL 2	2375	6555	6735	180	0	20
10550	157	90	20	SENW	JN OIL & GAS JN-HILL #1	2387	6580	6755	175	0	48
3523	157	91	2	NWNW	CARDINAL PETROL. CO. EINAR ARNESON #1	2389	6623	7010	387	0	48
12364	157	91	2	SWSW	CENEX SOLBERG #13-2	2353	6620	6984	364	0	58
4682	157	91	4	SESE	UNION OIL CO. OF CALIFORNIA EDWIN JOHNSON #1	2372	6682	6910	228	0	5
3228	157	91	6	NENE	CALIFORNIA OIL CO. ELEFSON FLB #1	2429	6808	7143	335	0	12
6645	157	91	10	SWSW	CHAPMAN EXPLOR., INC. ERICKSON #1	2341	6660	6922	262	30	30
8991	157	91	15	SESE	MARATHON OIL CO. HOWELL #15-44	2343	6691	6920	229	0	0
8371	157	91	17	SWSW	TRUE OIL CO. KUSTER #14-17	2308	6750	6977	227	0	0
4432	157	91	23	NWSE	UNION OIL CO. OF CALIFORNIA RUDOLPH BROTHERS #1	2277	6627	6845	218	0	0
655	157	94	1	SWNW	P. R. RUTLEDGE R. O. BURBIDGE #1	2466	7105	7340	235	10	10
1298	157	94	2	NENW	AMERADA PETROL. CORP. MARYAN SATHER "A" #3	2435	7010	7243	233	0	13
534	157	94	2	NESW	AMERADA PETROL. CORP. BERGITTE LOKKEN #1	2399	6985	7230	245	0	0
605	157	94	2	SWNE	SKELLY OIL CO. NELS WANGERUD #1	2417	7000	7235	235	0	0
704	157	94	2	SWNW	AMERADA PETROL. CORP. SATHER LOKKEN U WELL #1	2399	6965	7195	230	0	8
1012	157	94	3	NENE	AMERADA PETROL. CORP. MARYAN SATHER "A" #2	2389	6930	7162	232	0	20
1003	157	94	3	NENW	AMERADA PETROL. CORP. C. C. LOOKEN TR-1 #2	2375	6930	7162	232	0	12
646	157	94	3	NESE	AMERADA PETROL. CORP. LOKKEN-RISAN U. #1	2360	6903	7140	237	0	0
944	157	94	3	NESW	AMERADA PETROL. CORP. M. C. JORSTAD #1	2332	6860	7103	243	0	5
737	157	94	3	SWNE	AMERADA PETROL. CORP. M. SATHER "A" #1	2375	6910	7150	240	0	23

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
1123	157	94	3	SWSE	AMERADA PETROL. CORP. LOKKEN-RISAN U. #2	2354	6882	7115	233	0	0
307	157	94	5	NESW	AMERADA PETROL. CORP. O. P. LOKKEN #1	2347	6760	6965	205	0	0
746	157	94	5	SWNW	AMERADA PETROL. CORP. ELMER NESS TR-1 #1	2369	6722	6980	258	0	5
175	157	94	5	SWSW	AMERADA PETROL. CORP. OLIVER C. LOKKEN 1	2365	6730	6980	250	0	0
760	157	94	6	NENE	AMERADA PETROL. CORP. ESTHER KNOSHAUO #4	2366	6707	6955	248	0	20
554	157	94	6	NENW	AMERADA PETROL. CORP. ESTHER KNOSHAUG #3	2437	6785	7037	252	0	5
493	157	94	6	NESE	AMERADA PETROL. CORP. ESTHER HANSON #2	2372	6710	6970	260	0	5
184	157	94	6	NESW	AMERADA PETROL. CORP. WILLIAM HANSON #1	2439	6760	7060	300	0	0
367	157	94	6	SWNE	AMERADA PETROL. CORP. KNOSHAUG #2	2387	6760	7018	258	0	0
220	157	94	6	SWNW	AMERADA PETROL. CORP. ESTHER KNOSHAUG #1	2465	6792	7060	268	0	8
129	157	94	6	SWSE	AMERADA PETROL. CORP. ESTHER HANSON 1	2415	6763	7048	285	0	0
415	157	94	6	SWSW	AMERADA PETROL. CORP. WILLIAM HANSON #2	2429	6730	7002	272	0	13
245	157	94	7	NENE	AMERADA PETROL. CORP. HENRY RHODE #1	2406	6760	7058	293	0	0
513	157	94	7	NENW	AMERADA PETROL. CORP. R. G. MCGUINNESS A #1	2362	6707	7000	293	0	28
851	157	94	7	NESE	AMERADA PETROL. CORP. HENRY RHODE #3	2354	6722	6990	268	0	12
715	157	94	7	NESW	AMERADA PETROL. CORP. JOHN ARNSTAD #1	2366	6750	7002	252	0	0
502	157	94	7	SWNE	AMERADA PETROL. CORP. HENRY RHODE #2	2404	6760	7032	272	0	25
1095	157	94	7	SWNW	AMERADA PETROL. CORP. R. G. MCGUINNESS	2347	6718	6990	272	0	0
1089	157	94	7	SWSE	AMERADA PETROL. CORP. JOHN ARNSTAD #3	2326	6720	6960	240	0	13
978	157	94	7	SWSW	AMERADA PETROL. CORP. JOHN ARNSTAD #2	2381	6790	7040	250	0	4
1292	157	94	8	NENW	AMERADA PETROL. CORP. ESTHER HANSON T 1 #1	2379	6772	7020	248	0	0
1030	157	94	8	SWNW	AMERADA PETROL. CORP. HENRY RHODE #4	2410	6783	7057	274	0	15
1116	157	94	8	SWSW	AMERADA PETROL. CORP. JOHN ARNSTAD 4	2332	6730	6990	260	0	25
1177	157	94	9	NESE	LON H. CRON MARTIN C. JORSTAD #3	2277	6755	7035	280	0	0
1307	157	94	9	SWSE	LON H. CRON MARTIN C. JORSTAD #6	2319	6766	7018	252	0	4
6087	157	94	9	SWSE	TOM BROWN, INC. JORSTAD #9-34	2325	6762	7000	238	0	0
1002	157	94	10	NENW	F. A. CRON MARTIN C. JORSTAD #1	2316	6840	7087	247	0	5
1270	157	94	10	NESW	LON H. CRON MARTIN C. JORSTAD #5	2290	6828	7085	257	0	0
1055	157	94	10	SWNW	F. A. CRON MARTIN C. JORSTAD #2	2283	6782	7050	268	0	10
1224	157	94	10	SWSW	F. A. CRON MARTIN C. JORSTAD #4	2253	6745	6977	232	0	0
1303	157	94	16	NENE	STANOLIND OIL & GAS CO. PAN AMERICAN STATE #1	2279	6755	6990	235	0	0
8562	157	94	16	NWNE	TEXAS OIL & GAS CORP. STATE "C" #1	2290	6757	6992	235	0	5
1341	157	94	16	SWNE	PAN AMERICAN PETROL. CORP. PAN AMERICAN STATE #2	2305	6775	7020	245	0	0
11280	157	94	16	SWNW	TOTAL PETROL., INC. WHITE EARTH STATE 1-16	2332	6790	7047	257	0	30
1191	157	94	18	NENE	AMERADA PETROL. CORP. C. A. GILBERTSON #1	2294	6690	6935	245	0	8

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
1253	157	94	18	NENW	AMERADA PETROL. CORP. C. A. SILVERSON B #1 "X"	2344	6753	6990	237	0	7
1380	157	94	18	SWNE	AMERADA PETROL. CORP. C. A. GILBERTSON #2	2334	6755	6985	230	0	0
1092	157	94	18	SWNW	AMERADA PETROL. CORP. SYVERSON #1	2347	6752	7000	248	0	6
1093	157	94	18	SWSW	AMERADA PETROL. CORP. O. T. HOAAS #1	2306	6735	6977	242	0	0
8999	157	94	21	NENE	RANGER OIL CO. LEE #1-21	2337	6890	7132	242	0	6
9068	157	94	21	SWSE	RANGER OIL CO. WILL #15-21	2221	6790	7032	242	12	10
5831	157	94	23	SWSW	SMOKEY OIL CO., INC. WILL #14-23	2300	6975	7225	250	0	10
8529	157	94	28	SWNE	KISSINGER PETROL. CORP. WILL #7-28	2164	6745	6978	233	0	3
9146	157	94	28	SWNW	RANGER OIL CO. RICE #5-28	2201	6800	7030	230	0	28
9447	157	94	28	SWSE	RANGER OIL CO. DOLAN #15-28	2187	6807	7045	238	0	7
7832	157	94	28	SWSW	DOME PETROL. CORP. NESET #1-28	2203	6795	7030	235	0	5
11152	157	94	29	SENE	PINTAIL PETROL., INC. TANDE 1	2229	6792	7018	226	0	6
724	157	94	30	SWSW	AMERADA PETROL. CORP. LEROY NELSON "A" #1	2238	6727	6982	255	0	35
1032	157	94	31	NESW	AMERADA PETROL. CORP. G. O. NELSON #3	2259	6750	7020	270	0	30
612	157	94	31	SWNW	AMERADA PETROL. CORP. G. O. NELSON #1	2264	6755	7010	255	0	80
822	157	94	31	SWSW	AMERADA PETROL. CORP. G. O. NELSON #2	2265	6800	7032	232	0	30
7945	157	94	32	SWSW	DOME PETROL. CORP. WHEELER #1-32	2258	6793	7048	255	0	0
9473	157	94	34	SWSE	RANGER OIL CO. FURLOW #15-34	2281	7020	7217	197	0	3
398	157	95	1	NENE	AMERADA PETROL. CORP. IDA OLSON 3	2428	6765	7017	252	0	30
96	157	95	1	NENW	AMERADA PETROL. CORP. A. L. IVES #1-A	2418	6705	7010	305	0	70
114	157	95	1	NESE	AMERADA PETROL. CORP. IDA OLSON #1	2438	6750	7060	310	0	0
82	157	95	1	NESW	AMERADA PETROL. CORP. A. L. IVES #1	2400	6705	7015	310	0	5
350	157	95	1	SWNE	AMERADA PETROL. CORP. A. L. IVES A #2	2431	6750	7012	262	0	35
855	157	95	1	SWNW	AMERADA PETROL. CORP. A. IVES #1	2433	6750	7000	250	0	7
299	157	95	1	SWSE	AMERADA PETROL. CORP. IDA OLSON #2	2369	6700	6950	250	12	12
419	157	95	1	SWSW	AMERADA PETROL. CORP. LUDVIG BAKKEN #2	2442	6780	7057	277	0	0
256	157	95	2	NENE	AMERADA PETROL. CORP. A. L. IVES #2	2431	6730	7018	288	0	38
713	157	95	2	NENW	AMERADA PETROL. CORP. ADOLPH BORSTAD #4	2467	6810	7060	250	0	0
1060	157	95	2	NESE	AMERADA PETROL. CORP. LALIM IVES U. "A" #1	2430	6755	7033	278	0	0
380	157	95	2	NWNE	HUNT OIL CO. H. T. HAMRE #1	2465	6792	7060	268	0	5
167	157	95	2	SWSE	AMERADA PETROL. CORP. OSCAR O. BAKKEN #1	2447	6780	7062	282	0	0
1062	157	95	2	SWSW	AMERADA PETROL. CORP. THROND & LALIM U. #1	2455	6830	7090	260	0	0
12024	157	95	3	SWNW	TEXAKOTA, INC. H. BORSTAD 3-3	2504	6905	7160	255	0	12
5656	157	95	3	SWSW	TEXAKOTA, INC. H. BORSTAD #1	2468	6830	7103	273	0	20
5545	157	95	4	CSE4	TEXOTA OIL M. BORSTAD #1	2774	6860	7135	275	0	23

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
6571	157	95	4	NENE	TEXAKOTA, INC. H. BORSTAD #4-2	2490	6867	7130	263	0	10
6594	157	95	4	NENE	TEXAKOTA, INC. H. BORSTAD #4-3	2484	6870	7130	260	0	25
11405	157	95	4	NENW	PRIMARY FUELS, INC. HEMSING 1-4	2434	6810	7102	292	0	5
7543	157	95	4	NESW	W. H. HUNT TRUST ESTATE BAKKEN #1	2479	6892	7173	281	0	10
1477	157	95	9	NENE	AMERADA PETROL. CORP. CHRIST HEMSING #1	2445	6820	7097	277	0	25
5658	157	95	9	NENE	TEXAKOTA, INC. & HUNT OIL CO. HEMSING #1	2458	6835	7103	268	0	27
5197	157	95	9	NENW	AMERADA PETROL. CORP. HEMSING #1-9	2434	6855	7120	265	0	30
1165	157	95	10	NENE	AMERADA PETROL. CORP. BORSTAD UNIT #1	2391	6720	7035	315	0	0
1103	157	95	10	NESE	HUNT OIL CO. H. T. HAUMRE "A" #1	2373	6758	7020	262	0	0
1263	157	95	10	SWNE	AMERADA PETROL. CORP. BORSTAD U. #2	2383	6760	7020	260	0	0
366	157	95	11	NENE	AMERADA PETROL. CORP. O. O. BAKKEN #2	2486	6760	7047	287	0	8
971	157	95	11	NENW	AMERADA PETROL. CORP. LALIM BAKKEN #1	2421	6780	7040	260	0	0
93	157	95	11	NESE	AMERADA PETROL. CORP. H. M. BORSTAD #1	2387	6750	7012	262	0	0
913	157	95	11	NESW	AMERADA PETROL. CORP. BORSTAD + WEFLEN #3	2366	6745	7005	260	0	0
811	157	95	11	SWNE	AMERADA PETROL. CORP. BAKKEN UNIT #1	2389	6743	7007	264	0	6
260	157	95	11	SWNW	AMERADA PETROL. CORP. H. O. BAKKEN U. #1-A	2404	6777	7035	258	0	0
1027	157	95	11	SWSE	AMERADA PETROL. CORP. BORSTAD + WEFLEN #4	2401	6793	7032	239	0	12
1044	157	95	11	SWSW	AMERADA PETROL. CORP. H. BAKKEN U. #1	2356	6745	6995	250	0	0
335	157	95	12	NENE	AMERADA PETROL. CORP. R. G. MCGUINESS #2	2355	6690	6968	278	0	0
62	157	95	12	NENW	AMERADA PETROL. CORP. LUDVIG BAKKEN #1	2398	6750	7005	255	0	0
899	157	95	12	NESE	AMERADA PETROL. CORP. R. G. MCGUINESS #4	2387	6787	7030	243	0	0
308	157	95	12	NESW	AMERADA PETROL. CORP. H. O. BAKKEN #2	2416	6795	7047	252	0	0
92	157	95	12	SWNE	AMERADA PETROL. CORP. R. G. MCGUINESS #1	2357	6720	6985	265	0	0
32	157	95	12	SWNW	AMERADA PETROL. CORP. BAKKEN #1	2458	6803	7057	254	0	0
681	157	95	12	SWSE	AMERADA PETROL. CORP. R. A. MCGUINESS #3	2382	6790	7050	260	0	16
162	157	95	12	SWSW	AMERADA PETROL. CORP. CLIFFORD SYVERSON #1	2374	6750	7010	260	0	0
876	157	95	13	NENE	AMERADA PETROL. CORP. C. A. IVERSON "A" #1	2386	6800	7050	250	0	6
649	157	95	13	NENW	AMERADA PETROL. CORP. C. SYVERSON #2	2367	6755	7015	260	0	5
1021	157	95	13	NESE	HUNT OIL CO. C. A. SWANSON #1	2330	6765	7000	235	0	7
872	157	95	13	NESW	AMERADA PETROL. CORP. C. SYVERSON #2	2391	6805	7050	245	0	0
1018	157	95	13	SWNE	AMERADA PETROL. CORP. ROY E. SYVERSON #3	2368	6780	7020	240	0	0
606	157	95	13	SWNW	AMERADA PETROL. CORP. ROY SYVERSON #1	2366	6750	7010	260	0	0
1000	157	95	13	SWSE	AMERADA PETROL. CORP. ROY SYVERSON #2 "A"	2351	6775	7022	247	0	0
777	157	95	13	SWSW	AMERADA PETROL. CORP. ROY SYVERSON #2	2346	6750	7000	250	0	0
301	157	95	14	NENE	AMERADA PETROL. CORP. BORSTAD + WEFLEN #2	2435	6810	7067	257	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
976	157	95	14	NENW	AMERADA PETROL. CORP. PETER P. BRAATEN #2	2372	6762	7013	251	0	0
446	157	95	14	NESE	AMERADA PETROL. CORP. DON PEDERSON #1	2356	6740	7003	263	0	0
473	157	95	14	NESW	AMERADA PETROL. CORP. LAURENCE PEDERSON #1	2343	6730	6973	243	0	0
365	157	95	14	SWNE	AMERADA PETROL. CORP. PETER P. BRAATEN #1	2367	6750	7000	250	0	0
1043	157	95	14	SWNW	AMERADA PETROL. CORP. PETER BRAATEN #3	2346	6725	6980	255	0	0
979	157	95	14	SWSE	AMERADA PETROL. CORP. D. PEDERSON #2	2351	6735	6987	252	0	0
676	157	95	14	SWSW	HUNT OIL CO. L. PEDERSON	2317	6735	6982	247	0	0
1151	157	95	15	NENE	AMERADA PETROL. CORP. PETER P. BRAATEN "A" #1	2340	6735	6995	260	0	0
8257	157	95	15	NESE	ENERGETICS, INC. GALLAGHER #43-15	2322	6750	6992	242	0	0
6029	157	95	16	SENE	TIGER OIL CO. STATE OF N. D. #1-16	2427	6850	7110	260	0	10
11126	157	95	19	SESE	DAVIS OIL CO. LEONARDO FEE 1	2314	6820	7065	245	0	25
5725	157	95	20	SESE	TIGER OIL CO. BIWER #44-20	2305	6790	7010	220	0	0
173	157	95	21	NENW	WILLIAM HERBERT HUNT WILLARD T ODEGAARD #1	2359	6780	7042	262	0	35
1745	157	95	21	SENW	HUNT OIL CO. WILLARD ODEGAARD #1	2361	6797	7052	255	0	10
315	157	95	23	NESE	AMERADA PETROL. CORP. A. S. HAUSTVEIT #1	2321	6725	6992	267	0	0
1077	157	95	23	SWNE	HUNT OIL CO. L. PEDERSON #4	2323	6753	6983	230	0	0
1067	157	95	23	SWSE	HUNT OIL CO. A. S. HAUSTVEIT #2	2306	6750	7020	270	0	0
848	157	95	24	NESW	AMERADA PETROL. CORP. M. A. ZINKE #1	2268	6703	6970	267	0	7
946	157	95	24	SWNE	HUNT OIL CO. NELS NESET #2	2304	6710	6982	272	0	5
989	157	95	24	SWNW	AMERADA PETROL. CORP. M. A. ZINKE #2	2314	6757	7000	243	0	0
990	157	95	24	SWSE	AMERADA PETROL. CORP. ESTHER KNOSHAUG A #2	2284	6725	6987	262	0	10
751	157	95	24	SWSW	AMERADA PETROL. CORP. ESTHER KNOSHAUG A #1	2278	6710	6985	275	0	15
626	157	95	25	NENW	AMERADA PETROL. CORP. KNOSHAUG & NELSON A U. #1	2249	6700	6955	255	0	30
935	157	95	25	NESE	AMERADA PETROL. CORP. KOHENN #2	2232	6717	6970	253	0	17
585	157	95	25	NESW	AMERADA PETROL. CORP. KNOSHAUG & NELSON U. #1	2237	6700	6977	277	0	18
666	157	95	25	SWNE	AMERADA PETROL. CORP. PETER LARSON U "A" #1	2191	6650	6925	275	0	20
860	157	95	25	SWNW	AMERADA PETROL. CORP. KNOSHAUG & NELSON A-2	2204	6663	6940	277	0	10
552	157	95	25	SWSE	AMERADA PETROL. CORP. KOHENN #1	2238	6710	6983	273	0	15
926	157	95	25	SWSW	AMERADA PETROL. CORP. KNOSHAUG & NELSON U #2	2239	6720	7023	303	0	15
1029	157	95	26	NENE	AMERADA PETROL. CORP. HOSETH & NELSON U. #1	2249	6698	6972	274	0	22
744	157	95	26	NESE	RUDMAN-RUTLEDGE C. NELSON #1	2230	6698	6972	274	0	35
1078	157	95	26	SWNE	AMERADA PETROL. CORP. HENRY HOSETH #1	2240	6690	6955	265	0	30
12304	157	95	26	SWSW	SUN EXPLOR. & PROD. CO. INGA AMUNDSEN #1	2249	6753	7010	257	0	15
5612	157	95	28	NWSW	TIGER OIL CO. NELSON #13-28	2294	6767	6983	216	0	13
6108	157	95	28	SWNE	WILLIAMS EXPLOR. CO. OLSON #32-28	2289	6740	6980	240	0	6

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
5726	157	95	28	SWNW	TIGER OIL CO. HOVE #12-28	2303	6755	6983	228	0	10
5577	157	95	29	NENW	TIGER OIL CO. NELSON #21-29	2303	6780	7010	230	0	0
5648	157	95	29	NESE	TIGER OIL CO. NELSON #43-29	2312	6777	7000	223	0	40
5528	157	95	29	SWNE	TIGER OIL CO. OLSON #1-29	2313	6770	7007	237	0	35
11842	157	95	30	NENE	APACHE CORP. SCHMIDT 30-8	2318	6812	7048	236	0	32
5937	157	95	30	SENE	TIGER OIL CO. SCHMIDT #42-30	2316	6810	7050	240	0	38
6111	157	95	33	NWSE	WILLIAMS EXPLOR. CO. HARTSOCH #33-33	2271	6765	6995	230	0	7
1033	157	95	35	NENE	AMERADA PETROL. CORP. LEROY NELSON TRACT 3 #2	2250	6755	7030	275	0	75
257	157	95	35	NESE	AMERADA PETROL. CORP. LEROY NELSON TRACT 3 #1	2249	6777	7022	245	0	45
770	157	95	36	NENE	AMERADA PETROL. CORP. N D C #4	2254	6740	7005	265	0	45
909	157	95	36	NENW	AMERADA PETROL. CORP. N.D.C. #5	2252	6753	7005	252	0	20
973	157	95	36	NESE	AMERADA PETROL. CORP. N. D. "C" #6	2278	6775	7010	235	0	10
988	157	95	36	NESW	AMERADA PETROL. CORP. N.D.C. #7	2266	6775	7020	245	0	10
290	157	95	36	SWNE	AMERADA PETROL. CORP. N.D. "C" #2	2264	6765	7008	243	0	13
507	157	95	36	SWNW	AMERADA PETROL. CORP. N.D. "C"#3	2258	6780	7017	237	0	4
77	157	95	36	SWSE	AMERADA PETROL. CORP. N.D. "C" #1	2278	6795	7037	242	0	15
6723	157	96	2	NESW	APACHE CORP. WILLIAMS-DELANEY #1-2	2423	7100	7348	248	0	0
3363	157	96	19	NWSE	TEXACO, INC. CLARENCE PEDERSON (NCT-1) #1	2332	7305	7521	216	0	12
8714	157	96	19	SWSW	GETTY OIL CO. OWEN #19-13	2337	7350	7552	202	0	0
8296	157	96	30	SESE	GETTY OIL CO. TEMPLE #30-16	2324	7300	7498	198	0	0
7884	157	96	32	SWNW	GETTY OIL CO. TEMPLE PROSPECT #32-5	2317	7255	7457	202	0	0
5871	157	97	2	NESW	SMOKEY OIL CO., INC. FLATEN #23-2	2301	7360	7600	240	0	0
7789	157	97	2	NESW	PETRO LEWIS CORP. FLATEN #23-2X	2296	7360	7600	240	0	0
7063	157	97	22	SWNW	HUNT ENERGY CORP. JOHNSON #1	2339	7598	7777	179	0	0
3449	157	98	20	SENW	HUNT OIL CO. CHESTER J. HAMERS #1	2213	7550	7730	180	0	13
12018	157	98	29	NWNW	RAYMOND T. DUNCAN MEYER 1	2224	7630	7794	164	0	0
11375	157	99	6	NWNW	ATLANTIC RICHFIELD CO. ARCO GAFKJEN 3	2170	7280	7443	163	0	0
11189	157	99	20	NWNW	ATLANTIC RICHFIELD CO. ARCO VALLEVIK 1	2109	7360	7520	160	0	0
11421	157	99	32	SENW	HNG OIL CO. NELSON 32 1	2091	7440	7605	165	0	0
10893	157	100	1	C NE	ATLANTIC RICHFIELD CO. ARCO EIDSVOOG 1	2183	7282	7440	158	0	0
11490	157	100	1	NENW	HNG OIL CO. CURRAN 1	2193	7298	7453	155	0	0
7723	157	100	3	NESE	W. H. HUNT TRUST ESTATE DULLUM #1	2118	7215	7369	154	0	0
9110	157	100	4	NENE	RAYMOND T. DUNCAN WALSTAD #1-4	1961	7057	7200	143	0	0
11374	157	100	10	NWNW	ATLANTIC RICHFIELD CO. ARCO THORSTAD 1-10	1950	7095	7237	142	0	0
8531	157	100	11	NWSW	W. H. HUNT TRUST ESTATE DONALD DULLUM #1	2168	7340	7490	150	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
6896	157	100	22	NESE	W. H. HUNT TRUST ESTATE NJOS #1	2075	7330	7480	150	0	0
7903	157	100	23	SWSW	W. H. HUNT TRUST ESTATE CUNNINGHAM #1	2100	7360	7510	150	0	0
10541	157	101	4	NWSE	UNIVERSAL RES. CORP. WOLVERTON #1-4	2267	7350	7485	135	0	0
8123	157	101	8	SWSW	UNIVERSAL RES. CORP. BREVIK #1	2187	7310	7447	137	0	0
7834	157	101	17	SWNW	UNIVERSAL RES. CORP. BENDIXSON #1	2191	7303	7443	140	0	0
9206	157	101	17	SWNW	UNIVERSAL RES. CORP. BENDIXSON #2-17	2188	7300	7440	140	0	0
8643	157	101	18	NENE	TENNECO OIL CO. BENDIXSON #1-18	2220	7330	7470	140	0	0
6702	157	101	30	NWSW	UNION TEXAS PETROL. MELVIN ANDERSON #1	2383	7575	7740	165	0	0
9996	157	102	2	NESE	NATIONAL OIL CO. HOUGHT #43-2	2279	7320	7440	120	0	0
11746	157	103	1	SWSW	SUPERIOR OIL CO. MANGER 1-14	2344	7272	7400	128	0	0
4430	157	103	6	NENE	STATES OIL CO. MARCEL MULLER #1	2288	7145	7270	125	0	6
5271	157	103	10	NENE	TIGER OIL CO. J. CARL CARLSON #1-10	2358	7293	7422	129	0	0
3710	157	103	14	NWSW	H. L. HUNT G. C. GRODT #1	2440	7410	7555	145	0	14
3471	157	103	15	SWNW	H. L. HUNT RICHARD LARSEN #1	2474	7415	7577	162	0	20
3416	157	103	17	NWNW	WILLIAM HERBERT HUNT ANDREW DEJARLAIS ET AL #1	2410	7242	7440	198	0	7
4572	157	103	18	SWNE	MIAMI OIL PROD., INC. NELLIE MILLER #1	2293	7107	7310	203	0	20
3570	157	103	21	SWNE	H. L. HUNT DONALD RASSMUSSEN #1	2484	7453	7620	167	0	26
2959	157	103	22	SESE	WILLIAM HERBERT HUNT A. STRAND #1	2461	7490	7630	140	0	0
10336	157	103	26	NESW	GULF OIL CORP. FOLSTAD 1-26-4B	2449	7490	7640	150	0	0
10535	158	90	8	SWSW	MONSANTO OIL CO. PALMER #1	2258	6410	6490	80	0	0
10528	158	90	14	NENW	MONSANTO OIL CO. GOLDA #1	2320	0	0	0	0	0
1844	158	91	10	SWSW	ANSCHUTZ DRILLING CO., INC. A. F. LEHMAN #1	2402	6620	6765	145	0	0
5786	158	91	19	SWSE	BRALORNE INTERNATIONAL, INC. LUMLEY #15-19	2379	6712	6825	113	0	6
3353	158	91	28	NWNW	MONSANTO CHEMICAL CO. JACKSON #1	2344	6603	6815	212	15	15
11852	158	91	35	NWNW	BROOKS EXPLOR., INC. NELSON FLB 1-35	2359	6645	6940	295	0	80
9221	158	93	11	SWNE	HUSKY OIL CO. SEM POWERS LAKE #7-11	2300	6770	7015	245	0	3
8689	158	94	3	SESW	KISSINGER PETROL. CORP. RICE #14-3	2460	6870	7093	223	0	0
481	158	94	5	NENW	AMERADA PETROL. CORP. M. TANDE #1	2386	6680	6917	237	0	20
484	158	94	5	NESW	M. B. RUDMAN J. HANSON #1	2412	6717	6962	245	0	40
629	158	94	5	SWNW	AMERADA PETROL. CORP. M. TANDE TRACT 1 # 2	2404	6690	6930	240	0	35
804	158	94	5	SWSE	AMERADA PETROL. CORP. J. HANSON #1	2401	6730	6963	233	0	35
441	158	94	5	SWSW	AMERADA PETROL. CORP. J. HANSON #1	2429	6733	6970	237	0	35
728	158	94	6	NENE	AMERADA PETROL. CORP. PAUL TWEET #2	2369	6642	6887	245	0	35
638	158	94	6	NENW	AMERADA PETROL. CORP. A. L. CARLSON #1	2386	6645	6900	255	0	40
628	158	94	6	NESE	AMERADA PETROL. CORP. CLIFFORD HANSON "A" #2	2401	6690	6930	240	0	30

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
662	158	94	6	NESW	AMERADA PETROL. CORP. ARNOLD BLIKRE "A"T 2 #2	2397	6685	6923	238	0	25
510	158	94	6	SWNE	AMERADA PETROL. CORP. PAUL TWEET #1	2380	6655	6908	253	0	30
752	158	94	6	SWNW	AMERADA PETROL. CORP. A. L. CARLSON #2	2355	6610	6877	267	0	40
393	158	94	6	SWSE	AMERADA PETROL. CORP. CLIFFORD HANSON "A" #1	2405	6700	6935	235	0	40
340	158	94	6	SWSW	AMERADA PETROL. CORP. A. BLIKRE #1 "A"	2385	6687	6913	226	0	30
339	158	94	7	NENE	AMERADA PETROL. CORP. HANS HANSON 2	2400	6700	6930	230	0	30
279	158	94	7	NENW	CONCORD DEVELOP., INC. H. HANSON #2	2391	6690	6918	228	0	12
346	158	94	7	NESE	AMERADA PETROL. CORP. H. HANSON #2	2384	6693	6923	230	0	0
239	158	94	7	NESW	CONCORD DEVELOP., INC. HANS HANSON 1	2365	6645	6880	235	0	0
5350	158	94	7	NESW	AMERADA PETROL. CORP. TIOGA MAD. UNIT #L-146X	2368	6670	6890	220	0	0
312	158	94	7	SWNE	M. B. RUDMAN H. HANSON #1	2366	6667	6893	226	0	12
371	158	94	7	SWNW	AMERADA PETROL. CORP. O. K. EVAAS "B" #2	2359	6677	6893	216	0	0
238	158	94	7	SWSE	AMERADA PETROL. CORP. H. HANSON #1	2355	6655	6883	228	0	0
270	158	94	7	SWSW	AMERADA PETROL. CORP. O. K. EVAAS "B" #1	2353	6642	6880	238	0	10
452	158	94	8	NENW	AMERADA PETROL. CORP. RAYMOND JENSEN #1 TR 1	2403	6727	6965	238	0	40
304	158	94	8	NESW	CONCORD DEVELOP., INC. R. JENSEN #3	2376	6710	6940	230	0	12
394	158	94	8	SWNE	AMERADA PETROL. CORP. J. R. JENSEN 1	2369	6745	6965	220	0	10
278	158	94	8	SWNW	CONCORD DEVELOP., INC. R. JENSEN #2	2400	6673	6892	219	0	0
506	158	94	8	SWSE	AMERADA PETROL. CORP. O. T. BLIKRE #1	2337	6740	6973	233	0	0
231	158	94	8	SWSW	CONCORD DEVELOP., INC. R. JENSEN #1	2354	6700	6930	230	0	6
743	158	94	14	NESW	RUDMAN-RUTLEDGE HAROLD JOHNSON #1	2411	6890	7135	245	0	10
992	158	94	14	SWSW	AMERADA PETROL. CORP. HAROLD JOHNSON #1	2384	6855	7120	265	0	40
664	158	94	15	NESW	AMERADA PETROL. CORP. JOHN SKAAR #1	2357	6882	7117	235	0	0
929	158	94	15	SWNE	AMERADA PETROL. CORP. ERICKSON UNIT #1	2384	6865	7110	245	0	0
801	158	94	15	SWNW	AMERADA PETROL. CORP. ALBY TORGERSON #1	2335	6805	7047	242	0	35
565	158	94	15	SWSE	AMERADA PETROL. CORP. ALBERT ERICKSON #1	2364	6850	7108	258	0	8
584	158	94	16	NESE	AMERADA PETROL. CORP. N.D. "G" #1	2317	6800	7030	230	0	25
363	158	94	17	NENW	AMERADA PETROL. CORP. A. BLIKRE A TRACT 1 #2	2347	6725	6957	232	0	0
430	158	94	17	NESW	AMERADA PETROL. CORP. JOE RICE #3	2319	6753	6972	219	0	7
753	158	94	17	SWNE	AMERADA PETROL. CORP. O. T. BLIKRE #2	2312	6723	6965	242	0	8
209	158	94	17	SWNW	AMERADA PETROL. CORP. A. BLIKRE A #1	2320	6680	6920	240	0	0
1036	158	94	17	SWSE	AMERADA PETROL. CORP. J. RICE #4	2341	6780	7023	243	0	10
285	158	94	17	SWSW	CALIFORNIA OIL CO. OLE FOSSAA #2	2340	6730	6972	242	0	0
176	158	94	18	NENE	AMERADA PETROL. CORP. ORVILLE ERAAS #1	2328	6645	6882	237	0	10
345	158	94	18	NENW	AMERADA PETROL. CORP. ORVILLE ERAAS #2	2340	6632	6868	236	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
326	158	94	18	NESE	AMERADA PETROL. CORP. J. RICE #2	2322	6660	6910	250	0	0
282	158	94	18	NESW	AMERADA PETROL. CORP. CLIFFORD HANSON #2	2333	6630	6878	248	0	0
132	158	94	18	SWNE	AMERADA PETROL. CORP. J. RICE #1	2326	6637	6877	240	0	0
355	158	94	18	SWNW	AMERADA PETROL. CORP. CLIFFORD HANSON #3	2339	6605	6850	245	0	0
215	158	94	18	SWSE	AMERADA PETROL. CORP. MARY EDWARDSON #1	2340	6665	6913	248	0	0
99	158	94	18	SWSW	AMERADA PETROL. CORP. CLIFFORD HANSON #1	2361	6655	6905	250	0	0
374	158	94	19	NENE	AMERADA PETROL. CORP. MARY EDWARDSON #2	2331	6680	6932	252	0	0
193	158	94	19	NENW	HUNT OIL CO. L. OLSON #1	2379	6690	6947	257	0	0
581	158	94	19	NESE	AMERADA PETROL. CORP. OLE FOSSAA #2	2338	6730	6970	240	0	0
314	158	94	19	SESW	CALIFORNIA OIL CO. MATT BLESTRUD #7	2379	6735	6982	247	0	0
148	158	94	19	SWNE	AMERADA PETROL. CORP. OLE FOSSAA #1	2344	6692	6943	251	0	0
195	158	94	19	SWNW	HUNT OIL CO. L. OLSON #2	2375	6690	6930	240	0	0
293	158	94	19	SWSW	HUNT OIL CO. LUDVIG OLSON #3	2380	6722	6978	256	0	0
650	158	94	20	NENW	AMERADA PETROL. CORP. OLE FOSSAA TRACT 1 #1	2356	6777	7018	241	0	0
1048	158	94	20	NESW	AMERADA PETROL. CORP. ANDREW BOKN APC #2	2338	6783	7023	240	0	10
894	158	94	20	SWNE	CALIFORNIA OIL CO. R. JENSEN #1	2361	6818	7063	245	0	0
523	158	94	20	SWNW	M. B. RUDMAN R. JENSEN #1	2353	6753	7000	247	0	0
703	158	94	20	SWSW	AMERADA PETROL. CORP. ANDREW BOKN #1	2353	6750	6998	248	0	0
686	158	94	21	NENE	AMERADA PETROL. CORP. JOHN SKAAR "A" #1	2293	6805	7043	238	0	8
747	158	94	22	NENE	AMERADA PETROL. CORP. ALBERT ERICKSON #2	2369	6850	7110	260	0	5
5072	158	94	22	NENE	AMERADA PETROL. CORP. ALBERT ERICKSON #1X	2367	6850	7110	260	0	5
727	158	94	22	NESW	AMERADA PETROL. CORP. MINNIE LEE #1	2326	6878	7105	227	0	10
611	158	94	22	SWNE	AMERADA PETROL. CORP. ERNEST H. LEE #1	2345	6850	7080	230	0	13
237	158	94	23	NENW	AMERADA PETROL. CORP. CLIFFORD RICE #1	2425	6873	7147	274	0	35
782	158	94	23	SWNW	AMERADA PETROL. CORP. E. H. LEE #2	2380	6840	7110	270	0	65
330	158	94	23	SWSW	AMERADA PETROL. CORP. CLIFFORD RICE "A" #1	2399	6865	7135	270	0	50
594	158	94	27	SWSE	AMERADA PETROL. CORP. ANTON BOKN #1	2391	6897	7153	256	0	65
203	158	94	29	SWNE	AMERADA PETROL. CORP. R. BLESTRUD #1	2398	6832	7070	238	0	6
964	158	94	29	SWNW	AMERADA PETROL. CORP. A. BOKN "A" #1	2371	6800	7045	245	0	0
906	158	94	29	SWSW	AMERADA PETROL. CORP. OLE STENBAK A-1	2403	6810	7053	243	0	0
667	158	94	30	NENE	AMERADA PETROL. CORP. SONSTEBO #1	2358	6745	6997	252	0	0
461	158	94	30	NENW	AMERADA PETROL. CORP. M. BLASTRUD #3 TRACT 2	2354	6720	6970	250	0	0
809	158	94	30	NESE	AMERADA PETROL. CORP. M. J. HOLBY #3	2391	6790	7030	240	0	0
271	158	94	30	NESW	AMERADA PETROL. CORP. M. HOIBY #1	2369	6723	6967	244	0	0
460	158	94	30	SWNE	AMERADA PETROL. CORP. M. BLASTRUD #2 TRACT 2	2348	6730	6970	240	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
199	158	94	30	SWNW	AMERADA PETROL. CORP. M. BLESTRUD TRACT 2 #1	2394	6740	6980	240	0	20
482	158	94	30	SWSE	AMERADA PETROL. CORP. M. HOLBY #2	2366	6740	6985	245	0	4
454	158	94	30	SWSW	AMERADA PETROL. CORP. BLESTRUD-KNOSHAUG U #1	2419	6748	6990	242	0	13
729	158	94	31	NENE	AMERADA PETROL. CORP. PHILLIP EVAAS #4	2378	6770	7020	250	0	0
498	158	94	31	NENW	AMERADA PETROL. CORP. PHILLIP ERAAS #3	2406	6735	6988	253	0	5
749	158	94	31	NESE	AMERADA PETROL. CORP. GURENA SYNSTEBY #4	2364	6745	6980	235	0	0
186	158	94	31	NESW	AMERADA PETROL. CORP. G. SYNSTEBY #1	2423	6750	7015	265	0	15
368	158	94	31	SWNE	AMERADA PETROL. CORP. P. ERAAS #2	2385	6757	6992	235	0	0
135	158	94	31	SWNW	AMERADA PETROL. CORP. PHILLIP ERAAS #1	2446	6775	7023	248	0	10
487	158	94	31	SWSE	AMERADA PETROL. CORP. GUREAN SYNSTEBY #3	2396	6735	6990	255	0	13
400	158	94	31	SWSW	AMERADA PETROL. CORP. G. SUNSTEBY #2	2468	6800	7052	252	0	20
1217	158	94	32	NENW	AMERADA PETROL. CORP. ODELL KNOSHAUG #2	2377	6815	7050	235	0	0
488	158	94	32	SWNW	AMERADA PETROL. CORP. ODELL KNOSHAUG #1	2385	6780	7027	247	0	0
908	158	94	32	SWSW	AMERADA PETROL. CORP. G. SYNSTEBY #5	2364	6725	6980	255	0	8
561	158	94	34	NENE	AMERADA PETROL. CORP. M. SATHER TRACT 1 #1	2370	6900	7150	250	0	20
869	158	94	34	NESE	AMERADA PETROL. CORP. A. J. LEE TRACT 1 #1	2376	6900	7140	240	0	40
802	158	94	34	NESW	AMERADA PETROL. CORP. C. C. LOKKEN TRACT 1 #1	2354	6895	7120	225	0	0
617	158	94	34	SWNE	AMERADA PETROL. CORP. ANTON BUKN "A" #1	2353	6893	7120	227	0	0
941	158	94	34	SWSE	AMERADA PETROL. CORP. BERGITTE LOKKEN "A" #1	2387	6922	7150	228	0	10
886	158	94	35	NESW	AMERADA PETROL. CORP. OSCAR SATHER #1	2437	6980	7233	253	0	10
10424	158	94	35	NESW	HUSKY OIL CO. SATHER #1	2439	6997	7240	243	0	8
902	158	94	35	SWNW	AMERADA PETROL. CORP. SATHER LEE U. "A" #1	2382	6910	7160	250	0	0
803	158	94	35	SWSW	AMERADA PETROL. CORP. SATHER LEE U. WELL #1	2413	6967	7195	228	0	13
495	158	95	1	NESE	AMERADA PETROL. CORP. SPANGRUD #1	2357	6643	6877	234	0	45
783	158	95	1	SWNE	AMERADA PETROL. CORP. ANNA CARLSON #1	2359	6615	6855	240	0	45
726	158	95	1	SWSE	AMERADA PETROL. CORP. SPANGRUD #2	2353	6638	6863	225	0	30
8111	158	95	2	NENE	NOVA PETROL. CORP. C. BLIKRE #1	2371	6648	6890	242	0	53
9026	158	95	2	NENW	BURNETT OIL CO. C. BLIKRE #2	2416	6687	6934	247	0	37
8480	158	95	2	NESE	MARTIN OIL CO. BLIKRE #2-1	2369	6657	6885	228	0	35
8113	158	95	2	NESW	NOVA PETROL. CORP. GERMUNDSON #1	2392	6680	6920	240	0	20
9155	158	95	2	SWNE	BURNETT OIL CO. KEITH BLIKRE #1	2381	6640	6887	247	0	50
9365	158	95	2	SWSE	MARTIN OIL CO. BLIKRE #2-2A	2374	6678	6908	230	0	20
8926	158	95	3	NENE	BURNETT OIL CO. MERLIN R. JOHNSON #1	2380	6678	6916	238	0	20
10131	158	95	3	NESE	MARTIN OIL CO. GERMUNDSON RYE #3-2	2425	6718	6968	250	0	35
8479	158	95	3	SWSE	MARTIN OIL CO. GERMUNDSON-RYE #3-1	2423	6745	6990	245	0	25

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
5750	158	95	4	NWNW	WESSELY PETROL. CORP. GERALD A. OLSON #1	2448	6775	6998	223	0	8
2904	158	95	4	NWSW	WILLIAM HERBERT HUNT M. C. GOHRICK #2	2444	6792	7030	238	0	5
10129	158	95	4	SENW	MARTIN OIL CO. OLSON #4-2	2465	6770	7013	243	0	8
819	158	95	5	NWNW	WILLIAM HERBERT HUNT NELLIE MCGINNITY #2	2374	6755	6990	235	0	10
125	158	95	6	NWNE	WILLIAM HERBERT HUNT NELLIE MCGINNITY #1	2374	6695	6933	238	0	0
4665	158	95	6	SENW	AMERADA PETROL. CORP. EUGENE MCGINNITY #1	2399	6760	6943	183	0	0
10676	158	95	6	SENW	FULTON PRODUCING CO. UNION-MCGINNITY #1-6	2397	6750	7007	257	0	0
9207	158	95	6	SESW	RANGER OIL CO. MCGINNITY #14-6	2419	6765	7030	265	0	0
10209	158	95	6	SESW	DEPCO, INC. MCGINNITY #24-6	2401	6770	7025	255	0	0
11026	158	95	6	SWSE	DEPCO, INC. MCGINNITY 34-6	2429	6765	7015	250	0	30
10073	158	95	7	NESW	NORTHWEST EXPLOR. CO. SKARDERUD #10-7	2458	6795	7045	250	0	8
8722	158	95	7	NWNE	KISSINGER PETROL. CORP. SKARDERUD #2-7	2468	6822	7060	238	0	8
12156	158	95	7	NWNE	DEPCO, INC. SKARDERUD #2-7R	2466	6830	7072	242	0	8
11450	158	95	7	NWSE	DEPCO, INC. SKARDERUD 33-7	2423	6755	7015	260	0	18
10480	158	95	7	SENW	DEPCO, INC. SKARDERUD #22-7	2430	6785	7037	252	0	6
2780	158	95	8	NESE	RUDMAN RES., INC. NELSON BROS. #1	2407	6750	7000	250	0	0
9801	158	95	8	NWNW	DEPCO, INC. MCGINNITY #11-8	2479	6835	7082	247	0	8
2693	158	95	8	SENE	GREAT PLAINS ROYALTY CORP. & JACK RAUSE EILEEN GOHRICH #1	2418	6770	7015	245	0	0
7556	158	95	8	SWSW	PALMER INVEST. O. C. LENZ #1	2384	6740	7000	260	0	20
2274	158	95	9	NESW	WILLIAM HERBERT HUNT NELSON BROS. #1	2452	6788	7040	252	0	7
2789	158	95	9	NWNE	WILLIAM HERBERT HUNT SELMER TORGERSON #1	2441	6780	7035	255	0	10
2812	158	95	9	NWNW	WILLIAM HERBERT HUNT MORRIS GOBRICK #1 "A"	2418	6765	7012	247	0	5
2771	158	95	9	NWSE	WILLIAM HERBERT HUNT THEODORE BLIKRE #1	2446	6760	7028	268	0	0
7682	158	95	10	NENE	MARTIN OIL CO. GERMUNDSON RYE #10-1	2626	6725	6970	245	0	10
229	158	95	10	SENW	NORTHERN PUMP CO. A. M. FRUH #1	2453	6812	7067	255	0	0
1051	158	95	11	NENE	AMERADA PETROL. CORP. THORVOLD DALEN #1	2393	6690	6925	235	0	18
8482	158	95	11	NENW	BURNETT OIL CO. FEDERAL LAND BANK #1	2380	6693	6940	247	0	35
8112	158	95	11	NESW	NOVA PETROL. CORP. E. BLIKRE #1	2416	6728	6982	254	0	30
9246	158	95	11	SWSE	ENERGETICS, INC. TOWNSEND #34-11	2385	6715	6953	238	0	20
627	158	95	12	NENE	AMERADA PETROL. CORP. O. K. ERAAS "A" #2	2345	6660	6870	210	0	0
576	158	95	12	NENW	AMERADA PETROL. CORP. IVER DROVDAL #1	2365	6675	6890	215	0	0
12270	158	95	12	NENW	AMERADA HESS CORP. DROVDAHL #12-21	2369	6660	6882	222	0	0
431	158	95	12	NESE	AMERADA PETROL. CORP. ARNOLD BLIKRE #3	2344	6660	6892	232	0	15
714	158	95	12	NESW	AMERADA PETROL. CORP. ARNOLD BLIKRE #4	2357	6667	6894	227	0	30

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
205	158	95	12	SWNE	AMERADA PETROL. CORP. O. K. ERAAS A #1	2339	6653	6872	219	0	0
905	158	95	12	SWNW	AMERADA PETROL. CORP. IVER DROVDAL #2	2372	6680	6900	220	0	12
292	158	95	12	SWSE	AMERADA PETROL. CORP. ARNOLD BLIKRE #2	2352	6643	6885	242	0	18
228	158	95	12	SWSW	AMERADA PETROL. CORP. C. W. WILLIAMS #1	2362	6652	6890	238	0	30
156	158	95	13	NENE	HUNT OIL CO. EMIL MORATZKA #1	2342	6627	6870	243	0	15
172	158	95	13	NENW	AMERADA PETROL. CORP. ARNOLD BLIKRE #1	2354	6664	6903	239	0	0
65	158	95	13	NESW	AMERADA PETROL. CORP. REINERT SKAAR #1	2388	6700	6952	252	0	0
157	158	95	13	SWNE	AMERADA PETROL. CORP. MORATZKA #2	2347	6657	6900	243	0	0
108	158	95	13	SWNW	AMERADA PETROL. CORP. ARNOLD BLIKRE #1	2370	6690	6938	248	0	0
276	158	95	13	SWSE	AMERADA PETROL. CORP. REINERT SKAAR #3	2363	6652	6907	255	0	0
509	158	95	13	SWSW	AMERADA PETROL. CORP. REINERT SKAAR #5	2380	6690	6943	253	0	0
717	158	95	14	NENE	AMERADA PETROL. CORP. TALMER BLIKRE "A" #1	2382	6690	6932	242	0	8
699	158	95	14	NESE	AMERADA PETROL. CORP. OLINE HAGEN #2	2393	6712	6967	255	0	0
188	158	95	14	SWNE	AMERADA PETROL. CORP. BERNICE A. TOWNSEND	2418	6738	6993	255	0	0
800	158	95	14	SWSE	AMERADA PETROL. CORP. MILDRED L. GAUGER #1	2433	6723	7013	290	0	0
7595	158	95	15	SESE	ENERGETICS, INC. HOVE #44-15	2504	6810	7080	270	0	0
2009	158	95	16	NENW	AMERADA PETROL. CORP. NORTH DAKOTA "C" A #2	2446	6763	7027	264	0	16
3983	158	95	16	NESW	AMERADA PETROL. CORP. N.D. "C" A #3	2462	6757	7030	273	0	23
10772	158	95	16	NESW	AMERADA HESS CORP. NDCA 16-23	2475	6780	7057	277	0	20
98	158	95	16	SWNW	AMERADA PETROL. CORP. N. DAK. "C" A #1	2431	6735	7002	267	0	25
2886	158	95	17	NENE	GREAT PLAINS ROYALTY CORP. H. HOSETH #1	2424	6772	7025	253	0	6
8964	158	95	17	NESE	NATIONAL OIL CO. M.C. GOHRICK #43-17	2460	6787	7050	263	0	0
8103	158	95	18	NESW	NORTHWEST EXPLOR. CO. PEDERSON #2	2407	6753	7030	277	0	15
10397	158	95	18	NWNE	FULTON PRODUCING CO. PEDERSON #4	2404	6715	6990	275	0	37
9361	158	95	18	SWNE	NORTHWEST EXPLOR. CO. PEDERSON #3	2413	6740	7013	273	0	22
7877	158	95	18	SWSE	NORTHWEST EXPLOR. CO. PEDERSON #1	2388	6715	7000	285	0	12
7315	158	95	19	NWNE	NORTHWEST EXPLOR. CO. RYE #1	2374	6727	7007	280	0	10
7849	158	95	20	NENE	PROSPER ENERGY CORP. AL PEDERSON #1	2424	6750	7037	287	0	30
2182	158	95	21	NESW	WILLIAM HERBERT HUNT PEDERSON CATER U. #1	2472	6780	7072	292	0	25
5935	158	95	21	NWNE	AMERADA HESS CORP. NDC "A" DEEP UNIT #1	2513	6830	7108	278	0	0
9642	158	95	22	SWSE	KAISER-FRANCIS OIL CO. AGRE #2-22	2448	6765	7035	270	0	10
212	158	95	23	NENE	AMERADA PETROL. CORP. OLINE HAGER #1	2423	6738	7000	262	0	0
1142	158	95	23	NENW	AMERADA PETROL. CORP. APC HAGEN-WILKIE U. #1	2450	6760	7030	270	0	17
130	158	95	23	NESE	AMERADA PETROL. CORP. WARREN L LARSON	2469	6803	7057	254	0	0
543	158	95	23	NESW	HUNT OIL CO. LALIM & WILKIE U 1 #2	2470	6790	7070	280	0	22

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
574	158	95	23	SWNE	AMERADA PETROL. CORP. REINART SKAAR #6	2469	6800	7062	262	0	0
641	158	95	23	SWSE	AMERADA PETROL. CORP. WARREN L. LARSON	2481	6818	7078	260	0	15
634	158	95	23	SWSW	HUNT OIL CO. C. LALIM & H. WILKIE	2466	6790	7050	260	0	10
319	158	95	24	NENE	AMERADA PETROL. CORP. BLESTRUD TRACT 1 #2	2388	6697	6945	248	0	0
332	158	95	24	NENW	AMERADA PETROL. CORP. REINERT SKAAR #4	2391	6697	6950	253	0	0
373	158	95	24	NESW	AMERADA PETROL. CORP. REINERT SKAAR "A" #1	2442	6755	7012	257	0	10
4514	158	95	24	NWSW	AMERADA PETROL. CORP. IVES-SKAAR U. #1	2457	6782	7040	258	0	0
166	158	95	24	SWNE	AMERADA PETROL. CORP. MAT BLESTRUD TRACT 1 #1	2400	6710	6960	250	0	0
241	158	95	24	SWNW	AMERADA PETROL. CORP. REINERT SKAAR #2	2427	6740	6995	255	0	0
253	158	95	24	SWSE	HUNT OIL CO. LUDVIG OLSON #2	2422	6750	7004	254	0	12
263	158	95	24	SWSW	AMERADA PETROL. CORP. HJACMAR IVES A #1	2474	6810	7060	250	0	0
233	158	95	25	NENE	AMERADA PETROL. CORP. ALBERT SOLSETH #1	2374	6712	6965	253	0	12
318	158	95	25	NENW	AMERADA PETROL. CORP. HJALMAR IVES #2 "A"	2454	6760	7035	275	0	15
463	158	95	25	NESE	AMERADA PETROL. CORP. ALBERT SOLSETH #2	2451	6752	7023	271	0	5
259	158	95	25	NESW	AMERADA PETROL. CORP. OLE STENBAK #1	2457	6757	7000	243	0	0
4379	158	95	25	NWSW	AMERADA PETROL. CORP. HJALMAR IVES #3	2495	6768	7013	245	0	0
266	158	95	25	SWNE	AMERADA PETROL. CORP. CHRISTINA STAR #1	2437	6750	7012	262	0	15
423	158	95	25	SWNW	AMERADA PETROL. CORP. HJALMAR IVES A #3	2499	6793	7047	254	0	0
466	158	95	25	SWSE	AMERADA PETROL. CORP. OLE STENBAK #2	2473	6765	7007	242	0	0
154	158	95	25	SWSW	AMERADA PETROL. CORP. HJALMER IVES #1	2485	6743	6995	252	0	8
4519	158	95	25	SWSW	AMERADA PETROL. CORP. HJALMER IVES #4	2490	6748	7005	257	0	12
436	158	95	26	NENE	AMERADA PETROL. CORP. HJALMAR IVES #4	2479	6795	7052	257	0	0
512	158	95	26	NENW	HUNT OIL CO. CARL LALIM & H. WILKIE U. #1	2491	6803	7067	264	0	8
356	158	95	26	NESE	AMERADA PETROL. CORP. HJALMAR IVES #2	2521	6783	7042	259	0	25
537	158	95	26	NESW	AMERADA PETROL. CORP. LALIM IVES UNIT #1	2458	6728	7000	272	0	50
4323	158	95	26	NESW	AMERADA PETROL. CORP. HJALMER IVES #B-1	2460	6733	7003	270	0	50
4420	158	95	26	SENE	AMERADA PETROL. CORP. HJALMER IVES U #1	2496	6786	7047	261	0	0
541	158	95	26	SWNE	AMERADA PETROL. CORP. HJALMAR IVES A-5	2490	6780	7042	262	0	40
589	158	95	26	SWNW	HUNT OIL CO. LALIM-WILKIE U. #3	2348	6750	7020	270	0	37
298	158	95	26	SWSE	AMERADA PETROL. CORP. THROND LALIM #3	2485	6732	6997	265	0	43
556	158	95	26	SWSW	AMERADA PETROL. CORP. T. LALIM #5	2441	6725	6992	267	0	25
677	158	95	27	NENE	AMERADA PETROL. CORP. L. A. AGRE U. #1	2429	6745	7008	263	0	8
142	158	95	27	NESE	AMERADA PETROL. CORP. LESTER A. AGRE #1	2426	6722	6993	271	0	60
4390	158	95	27	SENE	AMERADA PETROL. CORP. LESTER A. AGRE #2	2424	6737	7008	271	0	37
7858	158	95	27	SWSW	MARTIN OIL CO. LALIM #27-1	2445	6750	7067	317	0	25

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
3899	158	95	28	NWNW	CALVERT DRILLING CO. C. W. CATER #1	2409	6745	7018	273	0	0
4342	158	95	28	SESW	CALVERT DRILLING CO. HAAKENSON #1	2417	6780	7062	282	0	23
4129	158	95	29	NENE	CALVERT DRILLING CO. EIDE U. #1	2377	6765	7053	288	0	38
7557	158	95	30	NWNE	NORTHWEST EXPLOR. CO. RODAHL #1	2368	6798	7060	262	0	50
2407	158	95	33	NESW	WILLIAM HERBERT HUNT ENDRE T. HEMSING #1	2439	6817	7085	268	0	15
10328	158	95	33	NESW	PRIMARY FUELS, INC. HEMSING #1	2439	6818	7087	269	0	15
11164	158	95	33	SWSE	PRIMARY FUELS, INC. HEMSING 2-33	2481	6840	7103	263	0	10
7820	158	95	34	C SW	TEXAKOTA, INC. H. BORSTAD #34-1	2466	6825	7092	267	0	7
235	158	95	35	NENE	AMERADA PETROL. CORP. LALIM #2	2467	6727	6983	256	0	17
453	158	95	35	NENW	AMERADA PETROL. CORP. T. LALIM #4	2453	6728	6990	262	0	20
12196	158	95	35	NENW	AMERADA HESS CORP. T. LALIM #35-21	2457	6735	7002	267	0	26
499	158	95	35	NESE	AMERADA PETROL. CORP. A. L. IVES #3	2428	6718	6973	255	0	33
118	158	95	35	NESW	AMERADA PETROL. CORP. ADOLPH H. BORSTAD #1	2480	6787	7055	268	0	33
4434	158	95	35	NESW	AMERADA PETROL. CORP. ADOLPH H. BORSTAD #3	2485	6795	7053	258	0	25
265	158	95	35	SWNE	AMERADA PETROL. CORP. A. H. BORSTAD #2	2450	6715	6977	262	0	27
164	158	95	35	SWNW	AMERADA PETROL. CORP. THROND LALIM #1	2457	6757	7060	303	0	25
471	158	95	35	SWSE	AMERADA PETROL. CORP. A. H. BORSTAD #3	2479	6790	7095	305	0	55
213	158	95	36	NENE	AMERADA PETROL. CORP. ND "C" B #2	2472	6790	7032	242	0	0
262	158	95	36	NENW	AMERADA PETROL. CORP. ND "C" B #3	2485	6758	7013	255	0	15
353	158	95	36	NESE	AMERADA PETROL. CORP. ND "C" B #4	2502	6810	7055	245	0	30
847	158	95	36	NESW	AMERADA PETROL. CORP. ND "C" B #8	2488	6780	7037	257	0	30
4321	158	95	36	NWSW	AMERADA PETROL. CORP. N.D. "C" B #9	2457	6752	7003	251	0	9
781	158	95	36	SWNE	AMERADA PETROL. CORP. ND "C" B #7	2505	6800	7063	263	0	35
447	158	95	36	SWNW	AMERADA PETROL. CORP. ND "C" B #6	2457	6715	6980	265	0	20
127	158	95	36	SWSE	AMERADA PETROL. CORP. ND "C" B #1	2473	6785	7033	248	0	22
421	158	95	36	SWSW	AMERADA PETROL. CORP. ND "C" B #5	2426	6730	6990	260	10	30
12174	158	96	1	NENW	BONRAY ENERGY CORP. SEATON #1-2	2324	6685	6950	265	0	4
10059	158	96	1	SENE	FULTON PRODUCING CO. GRIMSRUD #1	2347	6695	6960	265	0	6
9920	158	96	1	SESE	FULTON PRODUCING CO. SAGASER #1	2349	6733	6975	242	0	0
8785	158	96	3	NWSE	NORTHWEST EXPLOR. CO. GRIMSRUD #1	2330	6880	7150	270	53	53
7168	158	96	10	NENE	NORTHWEST EXPLOR. CO. SUNDHAGEN #1	2324	6843	7125	282	0	33
7665	158	96	10	SESE	NORTHWEST EXPLOR. CO. SUNDHAGEN #2	2372	6932	7207	275	0	5
9781	158	96	12	NENE	FULTON PRODUCING CO. BIWER #1	2377	6737	7015	278	0	0
11607	158	96	12	NESE	CENERGY EXPLOR. CO. BIWER 43-12	2397	6737	7005	268	0	3
11722	158	96	13	NENE	DEPCO, INC. EILEEN 41-13	2400	6772	7040	268	0	4

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
8979	158	96	22	NESW	RANGER OIL CO. HERFINDAHL #10-22	2420	7063	7332	269	0	0
7565	158	96	26	SWNE	NORTHWEST EXPLOR. CO. NORMARK #1	2354	6910	7170	260	0	0
8239	158	97	17	SWNE	LEAR PETROL. EXPLOR., INC. OASE #1	2298	7190	7410	220	0	20
9800	158	97	27	NWSE	ATLANTIC RICHFIELD CO. SIMPSON #1	2277	7250	7500	250	22	22
10766	158	98	2	NESW	ATLANTIC RICHFIELD CO. (ARCO) COTTONWOOD 1	2249	7110	7340	230	55	55
11903	158	98	28	NENW	LOUISIANA LAND & EXPLOR. CO. WHEELER 21-28 1	2254	7322	7522	200	0	10
3252	158	99	3	NENW	HUNT OIL CO. HOOVER #1	2150	6985	7146	161	0	0
8180	158	100	1	NESW	DEPCO, INC. JOHNSON #23-1	2133	6935	7102	167	0	0
7848	158	100	2	NWSE	DEPCO, INC. SMITH #33-2	2140	6963	7123	160	0	7
3439	158	100	4	NENW	HUNT OIL CO. MARTIN JOHNSON #1	2011	6805	6950	145	0	0
11216	158	100	28	NENW	ATLANTIC RICHFIELD CO. ARCO EIDSVOOG 1-28	2098	7095	7256	161	0	0
10329	158	100	36	SESE	ATLANTIC RICHFIELD CO. STATE GAFKJEN #1	2189	7295	7440	145	0	0
7164	158	101	10	NWSE	W. H. HUNT TRUST ESTATE HANSON #1	2087	6910	7063	153	0	0
6847	158	101	10	SWNE	W. H. HUNT TRUST ESTATE TANGEN #1	2033	6812	6967	155	0	10
9964	158	101	14	SESW	TRANSCO EXPLOR. CO. TXC PETERSON #1-14	2030	6947	7082	135	0	4
9282	158	102	3	NESW	MAPCO PROD. CO. ROSS #11-3	2258	6980	7090	110	0	8
11134	158	102	21	NESW	MAPCO OIL & GAS CO. EDDY MITCHELL 11-21	2399	7215	7338	123	0	0
11336	158	102	33	NWSW	SUPERIOR OIL CO. PASTERNAK #33-13	2444	7410	7527	117	0	0
7870	158	103	4	SWSE	DONALD C. SLAWSON ET AL TRIBAL #4-1	2146	6767	6880	113	0	0
3348	158	103	5	SWNE	CAROLINE HUNT SANDS A. T. LEBRUN #1	2091	6668	6767	99	0	0
3036	158	103	5	SWSW	H. L. HUNT GROTEAU #1	2047	6645	6732	87	0	0
5054	158	103	6	SWSE	MONSANTO CHEMICAL CO. BAGAASON #1	2035	6615	6683	68	0	0
4909	158	103	7	SWNE	MONSANTO CHEMICAL CO. MILO #1	2056	6653	6750	97	0	0
4921	158	103	8	SWNW	MONSANTO CHEMICAL CO. MILO #2	2040	6705	6800	95	0	0
2846	158	103	16	NWNE	HUNT OIL CO. STATE OF NORTH DAKOTA #1	2165	6832	6963	131	0	0
5114	158	103	21	SENW	UNIVERSAL RES. CORP. AGNES BURNS #1	2192	6954	7032	78	0	0
11494	158	103	30	SESE	ATLANTIC RICHFIELD CO. ARCO MAE BEE 1	2285	7120	7190	70	0	0
10770	159	90	7	NWNW	MONSANTO OIL CO. SUSAN 4-7	2351	0	0	0	0	0
3604	159	90	17	NWSE	PAN AMERICAN PETROL. CORP. V. J. WEINBERGER #1	2398	0	0	0	0	0
10592	159	90	20	NENE	MONSANTO OIL CO. KINSON-MERTES #1	2390	0	0	0	0	0
1368	159	90	29	NWNW	CALVERT DRILLING CO. RAY BRYANT #1	2367	0	0	0	0	0
10567	159	91	1	SESE	MONSANTO OIL CO. KINSON-ECKERT #1	2344	0	0	0	0	0
11728	159	91	13	NWSW	MERIDIAN OIL, INC. NORDLOEF 13-13	2385	6468	6505	37	0	0
11766	159	91	19	NWNW	MERIDIAN OIL, INC. NICKOL 11-19	2349	6495	6633	138	0	5
4433	159	91	24	NESE	UNION OIL CO. OF CALIFORNIA DAVE LINBURG #1	2381	6483	6530	47	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
6047	159	92	9	SESE	APACHE CORP. EDWARDS #1-9	2467	6618	6752	134	0	25
12316	159	92	23	SWSE	MERIDIAN OIL, INC. ST. JAMES #34-23	2459	6690	6840	150	0	7
4335	159	93	10	NWNE	I. J. WILHITE-CALKOTA ASSOC. CARL HONRUD #1	2290	6507	6692	185	0	5
1735	159	94	5	NESW	HUNT OIL CO. MARTIN R. THORSON 3	2382	6573	6777	204	0	5
1691	159	94	5	SWNW	HUNT OIL CO. N T M U K 19	2380	6535	6737	202	0	0
1753	159	94	5	SWSE	HUNT OIL CO. MARTIN R. THORSON 4	2354	6570	6775	205	0	10
1644	159	94	5	SWSW	HUNT OIL CO. N T M U K 17	2354	6530	6750	220	0	7
2065	159	94	6	NENW	SUN OIL CO. N. T. M. U. H 20	2391	6510	6720	210	0	9
12329	159	94	6	NENW	SUN EXPLOR. & PROD. CO. STROMBECK FLB #1	2421	6540	6726	186	0	0
1706	159	94	6	NESE	SPARTAN DRILLING CO. VICTOR GOEDERT #1	2343	6515	6720	205	0	0
2242	159	94	6	NESW	HUNT OIL CO. N. A. W. OTTERSON 1	2400	6540	6750	210	0	10
5411	159	94	6	SWNE	HUNT OIL CO. #I-19	2364	6510	6728	218	0	0
1625	159	94	7	NENE	SPARTAN DRILLING CO. THORSON 1	2330	6495	6717	222	0	7
1921	159	94	7	NENW	STEWART PETROL. WALTER D. SCHROEDER #1	2366	6525	6737	212	0	13
1690	159	94	7	NESE	SPARTAN DRILLING CO. N. T. M. U. J 14	2322	6515	6732	217	0	6
2184	159	94	7	NESW	SUNRAY DX OIL CO. ALBERT GOEDERT 1	2342	6505	6740	235	0	0
1578	159	94	8	NENW	HUNT OIL CO. MELVIN E. PETERSON 2A	2336	6540	6755	215	0	16
1724	159	94	8	NESW	SUNRAY DX OIL CO. MELVIN PETERSON 2	2340	6550	6760	210	0	10
12035	159	94	8	NWSW	TRUE OIL CO. PETERSON 13-8	2329	6540	6757	217	0	20
1467	159	94	8	SWNW	HUNT OIL CO. MELVIN E. PETERSON 1	2336	6535	6745	210	0	10
1618	159	94	8	SWSW	SUNRAY DX OIL CO. N. TIOGA-MAD. U. K 13	2358	6562	6790	228	0	8
1336	159	94	16	SWSE	CALVERT DRILLING CO. STATE 1	2207	6550	6772	222	0	0
1478	159	94	16	SWSW	CARTER OIL CO. STATE-TANDE 1	2215	6500	6740	240	10	10
1693	159	94	17	NENW	RUDMAN RES., INC. ARTHUR MOBERG 1	2279	6500	6742	242	0	0
1901	159	94	17	SWNE	CALVERT-KING-STEVENSON-INTERNATIONAL STATE CARLSON 1	2296	6550	6770	220	0	0
2276	159	94	17	SWSE	CARTER OIL CO. STATE-MOBERG 1	2232	6490	6720	230	0	0
2406	159	94	17	SWSW	CARTER OIL CO. STATE-MOBERG 2	2231	6490	6727	237	0	0
1806	159	94	18	NENE	FELMONT OIL CORP. & NORTH AMERICAN ROYALTIES JOHN PEDERSON 1	2331	6535	6797	262	0	0
2460	159	94	19	NESE	PHILLIPS PETROL. CO. OLE 1	2284	6520	6768	248	0	40
1479	159	94	20	NESE	CAROLINE HUNT TRUST ESTATE JOHN C. MOBERG 2	2268	6537	6768	231	0	0
1545	159	94	20	NESW	PHILLIPS PETROL. CO. FREDA PEDERSEN #1	2284	6520	6763	243	0	13
1594	159	94	20	SWNE	CARTER OIL CO. JOHN MOBERG 1	2233	6500	6730	230	0	0
2107	159	94	20	SWNW	CAROLINE HUNT TRUST ESTATE MOBERG UNIT 1	2207	6445	6670	225	0	0
1452	159	94	20	SWSE	CAROLINE HUNT TRUST ESTATE JOHN C. MOBERG 1	2259	6490	6733	243	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
1930	159	94	20	SWSW	PHILLIPS PETROL. CO. STUSRUD 1	2296	6535	6778	243	0	8
1483	159	94	21	NESW	CALVERT DRILLING CO. AUGUST MOBERG 1	2271	6617	6822	205	0	30
1537	159	94	21	SWNW	SKELLY OIL CO. AUGUST MOBERG 2	2239	6550	6800	250	17	17
1454	159	94	21	SWSW	SKELLY OIL CO. AUGUST MOBERG 1	2302	6625	6833	208	0	40
736	159	94	27	NWSE	WARREN PETROL. CO. MATHILDA JOHNSON #1	2318	6682	6890	208	0	15
1418	159	94	28	NWNW	WARREN PETROL. CO. HELEN SETTERLUND 1	2296	6590	6820	230	0	17
853	159	94	28	SWSW	WARREN PETROL. CO. M. A. SETTERLUND 1	2346	6650	6892	242	0	20
1387	159	94	29	NENE	CALVERT DRILLING CO. OLE TANDE 1	2301	6590	6812	222	0	10
1482	159	94	29	NENW	CALVERT DRILLING CO. OLE TANDE 3	2309	6580	6803	223	0	0
818	159	94	29	NESE	CARTER OIL CO. KATIE TORGERSON 2	2308	6590	6810	220	0	20
823	159	94	29	NESW	PHILLIPS PETROL. CO. POLLARD A-1	2303	6575	6805	230	0	10
1453	159	94	29	SWNE	CALVERT DRILLING CO. OLE TANDE 2	2283	6545	6778	233	0	20
1845	159	94	29	SWNW	CALVERT-KING INTERNATIONAL & WESTERN TANDE 4	2304	6573	6800	227	0	0
796	159	94	29	SWSE	CARTER OIL CO. KATIE TORGERSON 1	2316	6585	6808	223	0	6
2077	159	94	30	NENE	HUNT OIL CO. W. TANDE ET AL 1	2317	6582	6815	233	0	8
8690	159	94	30	NWNW	KISSINGER PETROL. CORP. TANDE #4-30	2282	6550	6772	222	0	20
9261	159	94	30	SENW	RANGER OIL CO. TANDE #6-30	2323	6605	6825	220	0	22
10575	159	94	30	SESE	BADGER OIL CO. CLAIR MARIE #1-30	2317	6597	6837	240	0	20
8464	159	94	31	NWNW	KISSINGER PETROL. CORP. HOIBY #4-31	2282	6532	6780	248	0	35
284	159	94	31	SESE	WARREN PETROL. CO. CARL ANDERSON 1	2342	6610	6853	243	0	30
966	159	94	32	NENE	AMERADA PETROL. CORP. TIOGA-MAD. U R 156	2336	6617	6865	248	0	20
643	159	94	32	NENW	WARREN PETROL. CO. OLE L. HOIBY 1	2335	6608	6845	237	0	0
1449	159	94	32	NESW	WARREN PETROL. CO. ANDERSON #3	2314	6595	6825	230	0	25
597	159	94	32	SESW	WARREN PETROL. CO. C. J. ANDERSON 1	2359	6640	6877	237	0	10
1561	159	94	32	SWNE	WARREN PETROL. CO. OPDAHL 2	2318	6598	6837	239	0	0
828	159	94	32	SWNW	WARREN PETROL. CO. C. J. ANDERSON 2	2302	6577	6812	235	0	12
1275	159	94	32	SWSE	WARREN PETROL. CO. OPDAHL #1	2340	6635	6870	235	0	20
10052	159	94	33	NESW	ENERGETICS, INC. ESTBY #23-33	2401	6780	7008	228	0	0
2790	159	94	34	NESW	I. J. WILHITE-SKELLY OIL CO. SETTERLUND #1	2410	6811	7040	229	0	0
12261	159	95	1	C NE	SUN EXPLOR. & PROD. CO. JENNIE HANSON #1	2387	6493	6706	213	0	0
2495	159	95	1	NENE	HUNT OIL CO. NORTH TIOGA MAD. U. F 20	2386	6508	6715	207	0	0
3476	159	95	1	NESE	CALVERT DRILLING CO. GOEDERT #1	2360	6495	6703	208	0	0
9067	159	95	8	NESE	RANGER OIL CO. TOFTNESS #9-8	2290	6545	6787	242	0	25
3506	159	95	12	NENE	CALVERT DRILLING CO. GOEDERT #2	2326	6480	6705	225	0	8
2122	159	95	18	NWNE	VAUGH PETROL., INC. H. HERMANSON #1	2313	6570	6822	252	6	30

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
2735	159	95	18	NWNW	GREAT PLAINS ROYALTY CORP. E. GUDVANGEN #1	2306	6535	6785	250	0	20
9010	159	95	19	N2SW	KAISER-FRANCIS OIL CO. F. E. MCCOY #2	2365	6625	6847	222	0	27
891	159	95	19	SESW	PURE OIL CO. F. E. MCCOY #1	2361	6615	6877	262	0	10
3442	159	95	19	SWSW	CALVERT DRILLING CO. F. E. MCCOY #1	2367	6626	6885	259	10	10
12302	159	95	21	NWNW	ANSCHUTZ CORP. OLSON #4-21	2329	6590	6837	247	0	50
3979	159	95	25	NESE	SUN OIL CO. O. G. HEIER #1	2284	6550	6785	235	0	30
9129	159	95	26	SWNW	MARTIN OIL CO. STRID #26-2	2315	6625	6874	249	0	40
9049	159	95	26	SWSW	MARTIN OIL CO. ANTON STRID #26-1	2316	6620	6850	230	0	35
322	159	95	28	SENW	HUNT OIL CO. CARL A. STROMBECK #1	2341	6593	6850	257	0	0
2451	159	95	30	CSW4	DALLEA PETROL. CORP. HAMLET U. #1	2384	6662	6902	240	0	0
7856	159	95	30	N2NW	SHAKESPEARE OIL CO., INC. MCCOY-KOSHMAN #2	2370	6656	6913	257	0	8
863	159	95	30	NWNE	PURE OIL CO. ELIZABETH L. STAHL #1	2364	6630	6890	260	13	20
778	159	95	30	NWNW	DALLEA PETROL. CORP. FRANK E. MCCOY #1	2360	6638	6885	247	8	8
1248	159	95	30	NWSE	INVESTORS OIL, INC. FRANK E. MCCOY #1	2374	6670	6910	240	0	0
820	159	95	30	NWSW	DALLEA PETROL. CORP. F. E. MCCOY #2	2379	6645	6893	248	0	8
11354	159	95	30	NWSW	DALLEA PETROL. CORP. HAMLET UNIT #3	2391	6670	6910	240	0	0
3007	159	95	30	SENE	DALLEA PETROL. CORP. HAMLET U. #2	2372	6650	6900	250	0	20
840	159	95	30	SENW	PURE OIL CO. W. C. KOSHMAN #1	2371	6643	6873	230	0	0
775	159	95	30	SESW	PURE OIL CO. EUGENE MCGINNITY #1	2357	6640	6873	233	0	0
3126	159	95	30	SWNW	CALVERT DRILLING CO. MCCOY KOSHMAN U. #1	2370	6645	6900	255	8	8
873	159	95	31	NWNE	PURE OIL CO. O. E. WESTBERG #1	2350	6655	6870	215	0	0
694	159	95	31	NWNW	DALLEA PETROL. CORP. OSCAR E. WESTBERG #1	2329	6638	6868	230	0	0
11366	159	95	31	SWSW	BONRAY ENERGY CORP. SEATON 31-1	2347	6663	6930	267	0	0
8877	159	95	34	NENE	BURNETT OIL CO. JEROL GOHRICK #1	2349	6620	6860	240	0	47
9128	159	95	34	NESE	MARTIN OIL CO. JOHNSON #34-1	2353	6637	6879	242	0	40
9095	159	95	34	NESW	BURNETT OIL CO. KARLGAARD #1	2357	6653	6905	252	0	60
10412	159	95	34	SWNE	BURNETT OIL CO. JEROL GOHRICK #2	2339	6617	6865	248	0	55
10057	159	95	34	SWSE	TOTAL PETROL., INC. MERLIN JOHNSON #34-2	2372	6665	6910	245	0	50
8236	159	95	35	SWNW	MARTIN OIL CO. STRID #35-1	2375	6640	6890	250	0	35
8889	159	95	35	SWSE	MARTIN OIL CO. STRID 35-2	2425	6687	6940	253	0	60
7683	159	95	35	SWSW	MARTIN OIL CO. JOHNSON #35-1	2410	6680	6930	250	0	40
8000	159	95	36	NWNE	KISSINGER PETROL. CORP. CARLSON #2-36	2370	6625	6867	242	0	30
7433	159	95	36	SENE	KISSINGER PETROL. CORP. CARLSON #8-36	2324	6562	6805	243	0	40
10331	159	95	36	SENW	PETRO LEWIS CORP. STATE #1-36	2387	6640	6880	240	0	35

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
11052	159	96	1	SESW	PINTAIL PETROL., INC. THORSON 1	2336	6544	6748	204	0	0
2915	159	96	12	NWSE	GREAT PLAINS ROYALTY CORP. & JACK ROUSE EGIDI GOETZ #1	2283	6497	6745	248	0	10
2910	159	96	12	NWSW	AMERADA PETROL. CORP. LEQNARD NELSON #1	2300	6567	6772	205	0	0
3392	159	96	12	SESE	C. R. A., INC. E. GOETZ #1-A	2317	6537	6784	247	10	15
2855	159	96	13	NWNE	AMERADA PETROL. CORP. E. L. GUDVANGEN #1	2302	6530	6776	246	0	10
2815	159	96	13	NWSE	GREAT PLAINS ROYALTY CORP. & JACK RAUSE E. GUDVAUGEN #1	2314	6570	6780	210	10	30
2865	159	96	13	NWSW	AMERADA PETROL. CORP. OLSON ESTATE UNIT #1	2307	6610	6827	217	8	8
313	159	96	16	NENE	K. ALFRED ELLISON ELLISON-N. D. #1	2266	6715	6923	208	0	0
10202	159	96	16	SESE	FULTON PRODUCING CO. TOTAL STATE #1-16	2347	6830	7047	217	0	0
10763	159	96	23	NWNE	FULTON PRODUCING CO. STRAND 1-23	2326	6650	6883	233	0	18
11730	159	96	24	NESE	DEPCO, INC. GOURLEY 43-24	2375	6645	6897	252	7	7
10396	159	96	25	NENW	FULTON PRODUCING CO. BRONSON #2-25	2335	6625	6870	245	10	10
11798	159	96	25	NESW	CENERGY EXPLOR. CO. BRONSON 23-25	2323	6643	6885	242	12	12
1071	159	96	25	SESE	ROBERT E. HANSON A. C. BRONSON-FED. LAND BANK #1	2355	6638	6880	242	0	0
3055	159	96	25	SWNE	PURE OIL CO. OLGA THOMPSON ET AL #1	2359	6657	6890	233	10	10
10292	159	96	25	SWSE	FULTON PRODUCING CO. FLB-BRONSON #1-25	2338	6650	6868	218	7	7
10260	159	96	26	NENE	FULTON PRODUCING CO. BRONSON #1-26	2319	6661	6900	239	0	0
9296	159	96	31	SESW	DIAMOND SHAMROCK CORP. SMITH #24-31	2363	7117	7363	246	0	38
2439	159	96	36	NENE	INVESTORS OIL, INC. HANSON-IMPERIAL-STATE #1	2336	6645	6868	223	0	12
10047	159	96	36	NESW	FULTON PRODUCING CO. TOTAL-STATE #1-36	2322	6677	6935	258	0	0
4667	159	96	36	NWSE	IMPERIAL OIL OF N. D., INC. STATE OF N. D. #1	2329	6690	6930	240	0	0
11805	159	96	36	SENW	CENERGY EXPLOR. CO. TOTAL STATE 22-36	2322	6680	6913	233	0	0
6745	159	97	10	SESW	HUNT ENERGY CORP. HALVORSON-FLB #1	2317	6940	7167	227	0	0
8039	159	97	10	SWNW	HUNT ENERGY CORP. OLAF SEVRE #1	2301	6900	7105	205	0	0
3274	159	98	2	NWSE	H. L. HUNT CARL T. SOLEM #1	2306	6850	7048	198	0	14
9323	159	98	25	NESW	TEXACO, INC. FEDERAL LAND BANK OF ST. PAUL #1	2295	7040	7270	230	0	34
6017	159	99	2	SESE	CITIES SERVICE OIL CO. SOVIK A #1	2273	6820	7000	180	0	35
8897	159	99	4	SENW	TERRA RES., INC. THORING #1-4	2163	6655	6834	179	0	35
10482	159	99	5	NESE	ATLANTIC RICHFIELD CO. ARCO FORSBERG #1	2192	6700	6872	172	0	30
8692	159	99	30	SWNE	TEXAS GAS EXPLOR. CORP. SOGARD #1-30	2074	6765	6913	148	0	7
9489	159	100	10	NESE	TEXAS GAS EXPLOR. CORP. ESTERBY #43-10	2116	6645	6810	165	0	13
9292	159	100	10	SENE	TEXAS GAS EXPLOR. CORP. ULLEDAL #42-10	2099	6610	6767	157	0	0
9490	159	100	11	NWNW	TEXAS GAS EXPLOR. CORP. HOLM #11-11	2128	6607	6783	176	0	47

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
9100	159	100	11	NWSW	TEXAS GAS EXPLOR. CORP. ESTERBY #1-11	2119	6625	6800	175	0	60
984	159	100	11	SWSW	PURE OIL CO. REUBEN ESTERBY #1	2056	6605	6760	155	0	8
7330	159	100	33	NENE	W. H. HUNT TRUST ESTATE DRAGSETH #1	2011	6750	6892	142	0	7
11431	159	100	36	SWSE	ATLANTIC RICHFIELD CO. ARCO ALAMO 1-36	2131	6945	7094	149	0	0
5509	159	101	2	NWNE	TRUE OIL CO. OLSON #31-2	2160	6645	6780	135	0	0
9465	159	101	6	SWNE	NORTHWEST EXPLOR. CO. PHARRIS #1	2248	6678	6793	115	0	10
3373	159	102	4	SWSW	HUNT OIL CO. LARSON SABINE #1	2218	6600	6700	100	12	12
10559	159	102	5	NESW	TXP OPERATING CO. TXPOC-FISCHER #1-5	2166	6503	6650	147	8	25
4946	159	102	6	NENE	TEXACO, INC. A. G. MERBACH (NCT-1) #1	2117	6453	6595	142	0	20
3748	159	102	7	NESE	HUNT OIL CO. JENS LUND #1	2123	6495	6660	165	38	38
3230	159	102	10	SWSE	HUNT OIL CO. ERNEST BEAVER #1	2272	6768	6868	100	0	0
11296	159	102	11	SESE	HRUBETZ OIL CO. BUBLITZ 1-11	2147	6640	6750	110	0	0
6162	159	102	15	NWSE	FARMERS UNION CENTRAL EXCHANGE LARSON #10-15	2295	6827	6927	100	0	0
8648	159	102	16	SESE	DEPCO, INC. STATE-LARSON #44-16	2295	6810	6923	113	0	10
7681	159	102	16	SWNE	AMINOIL USA, INC. AMERADA STATE #1	2288	6784	6892	108	0	12
8548	159	102	18	SENW	DEPCO, INC. FISCHER #34R-18	2182	6595	6745	150	0	8
8316	159	102	18	SWSE	DEPCO, INC. FISCHER #34-18	2157	6620	6745	125	0	7
8569	159	102	19	NENW	DEPCO, INC. GARAAS #21-19	2206	6790	6820	30	0	0
3106	159	102	20	SWSE	HUNT OIL CO. LARSON ESTATE #1	2224	6795	6897	102	0	0
6469	159	102	22	NWNE	FARMERS UNION CENTRAL EXCHANGE LARSON ET AL #2-22	2300	6843	6947	104	0	0
7657	159	102	26	SWNW	FARMERS UNION CENTRAL EXCHANGE ELMER HEXEM #5-26	2299	6875	7007	132	0	15
3043	159	102	27	SESE	JAMES S. WISE C. V. EMMERSON #1	2277	6892	7010	118	0	6
2933	159	102	33	NWSW	HUNT OIL CO. HERMAN A. GARAAS #1	2209	6830	6945	115	0	0
6678	159	103	2	SENW	ASHLAND EXPLOR., INC. QUARNE #1	2057	6388	6425	37	0	0
5394	159	103	9	SENW	TOM BROWN, INC. ANNA HATLING #1	1986	6310	6392	82	0	0
5229	159	103	10	SWSW	PENNZOIL UNITED, INC JACOBSON ESTATE #1	2020	6365	6465	100	0	0
3576	159	103	14	SWSW	HUMBLE OIL & REFINING CO. CYNTHIA ANGERMEIER #1	2051	6470	6580	110	0	0
4903	159	103	16	SWNE	MONSANTO CHEMICAL CO. TWIN STATE #16-1	2034	6405	6478	73	0	13
2887	159	103	20	SWSE	HUNT OIL CO. ISABELE LEGGE #1	2001	6388	6471	83	0	0
3318	159	103	23	SWSW	HUNT OIL CO. ANGERMEIER ET AL #1	2119	6620	6695	75	0	0
4663	159	103	24	NWSE	LEBEN DRILLING, INC. A. L. & C. L. FISCHER #1	2206	6750	6820	70	0	0
6739	159	103	28	NWSW	GETTY OIL CO. PRICE #12-28	2082	6510	6570	60	0	0
2864	159	103	28	SWNW	HUNT OIL CO. CLIFFORD PRICE "A" #1	2089	6510	6582	72	0	0
3142	159	103	28	SWSE	SKELLY OIL CO. R. A. AZURE #1	2095	6527	6680	153	0	0
3082	159	103	28	SWSW	HUNT OIL CO. CLIFFORD PRICE "A" #2	2062	6473	6597	124	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
5868	159	103	29	NESE	SKELLY OIL CO. GRENORA MADISON UNIT #18	2071	6462	6561	99	0	0
6873	159	103	29	SENE	ESTATE OF H. L. HUNT CARL R. CHRISTENSEN #2	2026	6425	6510	85	0	0
2824	159	103	29	SWNE	HUNT OIL CO. CLIFFORD PRICE #1	2042	6435	6515	80	0	0
3110	159	103	29	SWNW	H. L. HUNT-SKELLY OIL CO. CLIFFORD PRICE #3	2009	6423	6470	47	0	0
3029	159	103	29	SWSE	H. L. HUNT C. R. CHRISTENSEN #1	2055	6465	6573	108	0	0
3062	159	103	29	SWSW	HUNT OIL CO. CLIFFORD PRICE #2	2056	6495	6565	70	0	0
3262	159	103	31	SWNE	PHILLIPS PETROL. CO. DELPHINE ERICKSON #1	2045	6520	6577	57	0	0
3631	159	103	31	SWSE	SKELLY OIL CO. V. S. MEDHUS #3	2075	6520	6618	98	0	0
5770	159	103	32	NENE	SKELLY OIL CO. GRENORA MADISON UNIT #17	2079	6490	6605	115	0	0
3090	159	103	32	SWNE	H. L. HUNT-SKELLY OIL CO. VERRAH MEDHUS #1	2086	6515	6638	123	0	0
3113	159	103	32	SWNW	SKELLY OIL CO. V. S. MEDHUS #1	2053	6493	6600	107	0	0
3198	159	103	32	SWSE	TEXACO, INC. L. LUNDBY (NCT-2) #1	2123	6630	6730	100	0	0
3225	159	103	32	SWSW	SKELLY OIL CO. V. S. MEDHUS #2	2080	6523	6650	127	0	15
9412	159	103	33	NESW	HUNT OIL CO. LUNDBY #1-33	2073	6580	6680	100	0	0
3093	159	103	33	SWNE	SKELLY OIL CO. MICHEAL A. WALLERICH #1	2105	6625	6735	110	0	0
3109	159	103	33	SWNW	TEXACO, INC. L. LUNDBY (NCT-1) #1	2002	6530	6630	100	0	0
3300	159	103	33	SWSE	TEXACO, INC.-HUNT PETROL. CORP. LUNDBY FLB #1	2117	6657	6777	120	0	0
3180	159	103	33	SWSW	TEXACO, INC. R. LUNDBY "A" #1	2117	6630	6758	128	0	0
11795	159	103	36	SENW	AMERADA HESS CORP. FISCHER STATE 36-22	2273	6875	6969	94	0	0
11720	160	91	7	SWNE	LOUISIANA LAND & EXPLOR. CO. ARHART 42-7 1	2400	0	0	0	0	0
2892	160	91	10	SWSW	MONSANTO CHEMICAL CO. SWENSON #1	2327	0	0	0	0	0
10568	160	91	23	NWNE	MONSANTO OIL CO. ELDON #1	2337	0	0	0	0	0
8470	160	92	6	NWSE	MORAN EXPLOR., INC. WEINMANN #1	2394	0	0	0	0	0
5739	160	92	7	SWNW	W. A. MONCRIEF WEINMANN #7-1	2396	6430	6490	60	0	10
1715	160	92	8	SWNE	PETROL. CORP. OF AMERICA M. A. JENSEN #1	2408	0	0	0	0	0
2291	160	92	13	SWSW	U. S. SMELTING REFINING & MINING CO. J. AGNES LUCY #1	2441	0	0	0	0	0
3424	160	92	15	NESE	SUNRAY DX OIL CO. BEN L. LUCY #1	2456	0	0	0	0	0
2829	160	92	18	SESE	GREAT PLAINS ROYALTY CORP. M. K. & M. B. FEATHERSTONE #1	2348	6350	6460	110	0	0
3926	160	92	21	NESE	CALVERT DRILLING CO. TRAASTAD #1	2355	6420	6492	72	0	4
7917	160	92	21	SWSE	INEXCO OIL CO. WEINMANN #1-21	2358	6430	6505	75	0	7
8954	160	92	23	SWNW	SOUTHPORT EXPLOR., INC. J. A. CARTER, ET AL #1-23	2395	6410	6475	65	0	8
4162	160	92	26	SESE	PEL-TEX, INC. & CONOCO EDWARDS #1	2380	6475	6530	55	35	35
4016	160	92	29	SESE	CALVERT DRILLING CO. SUMMERS #1	2384	6500	6590	90	0	0
2834	160	93	14	NWSE	I. J. WILHITE-NORTH AMERICAN ROYALTIES N. PIXLEY #1	2373	6470	6555	85	0	7

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
2684	160	93	23	SENW	I. J. WILHITE IDA PIXLEY #2	2371	6472	6570	98	0	0
2564	160	93	23	SESE	I. J. WILHITE IDA PIXLEY #1	2372	6425	6585	160	0	0
3586	160	93	24	NWSE	NORTH AMERICAN ROYALTIES, INC. R. SKALICKY #1	2364	6375	6543	168	0	0
6802	160	93	24	SWNW	BWAB, INC. WESTERN INVEST. CO. #24-12	2394	6455	6588	133	0	12
3579	160	94	3	NENW	DALLEA PETROL. CORP. OLAF OLSON #2	2462	6570	6678	108	0	0
2071	160	94	3	SWNE	STEWART PETROL. OLAF OLSON #1	2468	6570	6680	110	0	0
3917	160	94	5	SWNE	GEOCHEMICAL SURVEYS NEAL HANSON #1	2357	6445	6614	169	0	0
4101	160	94	5	SWSE	GEOCHEMICAL SURVEYS H. E. & R. E. SMITH #1	2379	6462	6616	154	0	0
3466	160	94	6	NWSE	VAUGH PETROL., INC. RONALD H. POINTS #1	2318	6427	6544	117	0	0
2605	160	94	7	SWSW	LYDA HUNT-HERBERT TRUSTS E. BARMOEN #1	2305	6395	6570	175	0	0
2503	160	94	10	SWNE	SUN OIL CO. LESTER GROTE #1	2496	6570	6745	175	0	10
12290	160	94	17	SWSW	CONDOR PETROL., INC. BLANEY #17-1	2387	6547	6720	173	0	0
1966	160	94	18	SWSW	HUNT OIL CO. ELMER K. OLSON 1	2346	6485	6665	180	0	7
2100	160	94	19	SWNE	HUNT OIL CO. N. T. M. U. I 31	2378	6530	6698	168	0	0
11644	160	94	19	SWNW	ENERGY RES. OF N. D., INC. ENERGY-OVERLEE 1	2366	6482	6673	191	0	60
1785	160	94	19	SWSE	HUNT OIL CO. NORMAN G. OVERLEE 1	2382	6537	6720	183	0	0
1981	160	94	19	SWSW	HUNT OIL CO. N. T. M. U. G 29	2383	6510	6720	210	0	63
12109	160	94	20	SESW	SUN EXPLOR. & PROD. CO. SPANGRUD #1	2392	6529	6700	171	0	0
2081	160	94	20	SWNW	SPARTAN DRILLING CO. M. I. BERG #1	2389	6525	6710	185	0	0
10354	160	94	21	SWSE	AXEM RES., INC. NORTH TIOGA-STATEN #15-21	2426	6595	6763	168	0	0
2397	160	94	21	SWSW	W. E. BAKKE OIL HANSON #2	2425	6583	6760	177	0	0
2323	160	94	23	NENW	CALVERT-SUN JAMES MARUSKIE #1	2417	6535	6701	166	0	0
2490	160	94	27	SWNW	SUN OIL CO. JAMES MARUSKIE 2	2446	6655	6840	185	0	0
2440	160	94	28	SWNE	HUNT OIL CO. FREDRICKSON MARUSKIE 1	2427	6605	6780	175	0	0
2307	160	94	28	SWNW	W. E. BAKKE NELLS HANSON #1	2419	6580	6760	180	0	0
2528	160	94	28	SWSE	LAMAR HUNT M. FREDRICKSON ET AL 1	2412	6617	6812	195	0	0
2408	160	94	28	SWSW	KERR-MCGEE CORP. OLAF H. BERGER 1	2419	6596	6796	200	0	0
2646	160	94	29	NESW	HUMBLE OIL & REFINING CO. FREDRICKSON BANK OF N. D. 3	2376	6538	6722	184	0	8
2543	160	94	29	SWNE	CARTER OIL CO. FRED J. FREDRICKSON 2	2382	6533	6727	194	0	0
1719	160	94	29	SWNW	SPARTAN DRILLING CO. THOMPSON #1	2373	6522	6715	193	0	25
2101	160	94	29	SWSE	HUNT OIL CO. OVERLEE-BANK OF N.D. 1	2402	6590	6790	200	0	0
2194	160	94	29	SWSW	CARTER OIL CO. FRED J. FREDRICKSON 1	2402	6555	6750	195	0	30
1762	160	94	30	SWNE	HUNT OIL CO. CARL OVERLEE #1	2392	6557	6747	190	0	25
1974	160	94	30	SWNW	HUNT OIL CO. CARL OVERLEE 2	2377	6522	6710	188	0	25
1979	160	94	30	SWSE	HUNT OIL CO. CALMER OVERLEE 1	2419	6573	6775	202	0	35

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME.	KB	TT	TB	TTh	BS	MS
2033	160	94	30	SWSW	HUNT OIL CO. CARL OVERLEE 3	2389	6520	6720	200	0	0
2102	160	94	31	NENE	WILLIAM HERBERT HUNT CHRIST WOLD 1	2401	6562	6765	203	0	37
2082	160	94	31	NENW	SPARTAN DRILLING CO. BARNINGHAM MORTGAGE CORP. 1	2414	6570	6760	190	0	17
1927	160	94	31	NESE	FELMONT OIL CORP. & NORTH AMERICAN ROYALTIES CHRIST WOLD #2	2408	6555	6761	206	0	28
2066	160	94	31	NESW	SUN OIL CO. RICHARD STROMBECK, ET UX 2	2426	6535	6743	208	0	7
2364	160	94	31	SWNE	WILLIAM HERBERT HUNT CHRIST WOLD 2	2417	6563	6772	209	0	20
12366	160	94	31	SWSE	SUN EXPLOR. & PROD. CO. WOLD #1	2418	6570	6772	202	0	8
12062	160	94	31	SWSW	SUN EXPLOR. & PROD. CO. STROMBECK 1	2415	6525	6732	207	0	10
2208	160	94	32	SWNE	HUNT OIL CO. N. T. M. U. M 23	2413	6594	6783	189	0	0
2026	160	94	32	SWNW	HUNT OIL CO. O. WOLD-STATE 1	2377	6533	6735	202	0	36
2454	160	94	32	SWSE	PHILLIPS PETROL. CO. N. T. M. U. N-21	2407	6600	6792	192	0	22
1873	160	94	32	SWSW	FELMONT OIL CORP. & NORTH AMERICAN ROYALTIES CHRIST WOLD 1	2364	6525	6737	212	0	22
2436	160	94	33	SWNW	KERR-MCGEE CORP. V. C. BERGER 1	2425	6625	6812	187	0	0
6078	160	95	1	NWNW	WENNER PETROL. CORP. IVER & ISABELLE OLSON #1	2379	6440	6592	152	0	0
2552	160	95	2	NWNE	HUNT OIL CO. W. W. BLASIER #1	2373	6385	6555	170	0	0
2419	160	95	2	NWNW	H. L. HUNT LOUIS HOLTE #1	2360	6365	6530	165	0	0
2598	160	95	2	NWSE	PHILLIPS PETROL. CO. ARNTSON #1	2369	6383	6575	192	0	0
2441	160	95	2	NWSW	H. L. HUNT THOMAS OLSON #1	2330	6300	6460	160	0	0
5192	160	95	3	NENE	H. L. HUNT A. B. ERICSON #1	2373	6373	6518	145	0	0
2706	160	95	3	NWSE	H. L. HUNT THOMAS OLSON #1	2346	6350	6505	155	0	0
2514	160	95	11	NWNE	CONTINENTAL SKARPHOL "A" #1	2358	6380	6530	150	0	12
2637	160	95	11	NWNW	CONTINENTAL SKARPHOL "C" #1	2333	6330	6500	170	0	12
2571	160	95	11	NWSE	CONTINENTAL SKARPHOL "B" #1	2339	6350	6516	166	0	8
1933	160	95	11	SWSW	CALVERT DRILLING CO. MICHEAL SKARPHOL #1	2322	6350	6523	173	0	0
2823	160	95	12	NWNW	WILLIAM HERBERT HUNT STATE OF NORTH DAKOTA #1	2346	6397	6591	194	0	0
7907	160	95	16	SESE	KEBA OIL & GAS CO. SHELL-STATE #44-16	2329	6450	6620	170	0	0
8965	160	95	21	SESW	CLOVER ENERGY CORP. SKARPHOL #1	2316	6508	6688	180	0	0
2281	160	95	22	NESW	SPARTAN DRILLING CO. JENNIE ANDERSON #1	2288	6393	6582	189	0	0
2257	160	95	23	SWNE	HUNT OIL CO. HARMS J. GUNHUS 1	2306	6387	6560	173	0	0
1829	160	95	24	SWNE	HUNT OIL CO. K. H. HANSON 1	2361	6455	6648	193	0	45
2164	160	95	24	SWNW	HUNT OIL CO. ERWIN A. HANSON 1	2343	6470	6608	138	0	33
2103	160	95	24	SWSE	HUNT OIL CO. F. L. MCCOY 1	2368	6482	6677	195	0	78
2197	160	95	24	SWSW	HUNT OIL CO. NORTH TIOGA-MAD. U. C-29	2370	6460	6647	187	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
1923	160	95	25	NENE	HUNT OIL CO. MRS. OLIVER JOHNSON 1	2379	6518	6720	202	0	10
2280	160	95	25	NENW	HUNT OIL CO. NORTH TIOGA-MAD. U. D 28	2367	6473	6660	187	0	0
2083	160	95	25	NESW	HUNT OIL CO. NESS-SCHROEDER ET AL UNIT #1	2376	6498	6690	192	0	0
2429	160	95	26	NESE	TEXACO, INC. NORBY #1	2363	6470	6673	203	0	0
11162	160	95	32	NESE	SUPERIOR OIL CO. SWENSON 32-43	2272	6500	6712	212	0	10
6593	160	95	35	NESW	DOME PETROL. CORP. BERG & LANDBLOOM #1	2354	6520	6740	220	0	0
2295	160	95	36	NENW	HUNT OIL CO. NORTH TIOGA-MAD. U. D-24	2362	6482	6688	206	0	0
2098	160	95	36	NESE	HUNT OIL CO. NORTH TIOGA-MAD. U. F-22	2395	6520	6732	212	0	8
2468	160	95	36	NESW	HUNT OIL CO. C. O. JOHNSON 1	2369	6490	6700	210	0	10
10789	160	96	1	SWSE	SUPERIOR OIL CO. IVERSON 1-34	2349	6405	6580	175	0	6
12149	160	96	2	NENE	RAYMOND T. DUNCAN SKOR #1	2334	6330	6508	178	0	57
10981	160	96	3	NWSE	SUPERIOR OIL CO. PEDERSON 3-33	2352	6590	6780	190	0	5
10210	160	96	12	NWNE	SUPERIOR OIL CO. TANGSRUD #12-1	2348	6430	6613	183	0	6
5716	160	96	13	NWSW	NORVAL HAMERLY HAUGEN #2	2305	6410	6594	184	0	0
11331	160	96	13	SESW	CENERGY EXPLOR. CO. HAUGEN 24-13	2307	6410	6592	182	0	0
5691	160	96	14	NWSE	NORVAL HAMERLY HAUGEN #1	2328	6450	6655	205	0	0
9824	160	96	16	NESW	TEXACO, INC. C. G. FORTIER #1	2266	6450	6640	190	0	7
9584	160	96	22	SENE	MARTIN OIL CO. SULLIVAN #22-1	2269	6445	6632	187	0	0
5667	160	96	23	NWNE	NORVAL HAMERLY MOORE #1	2321	6450	6635	185	0	0
5925	160	96	23	NWSE	SHELL OIL CO. NYGAARD #33-23	2309	6458	6640	182	0	0
2759	160	96	23	SENW	SIGNAL DRILLING & EXPLOR., INC. SULLIVAN #1	2320	6460	6645	185	0	0
5610	160	96	24	NWNE	NORVAL HAMERLY TOFTE #1	2308	6435	6612	177	0	0
5628	160	96	24	NWNW	NORVAL HAMERLY HOWARD #1	2309	6425	6612	187	0	0
10435	160	96	24	NWSE	MARTIN OIL CO. VATNE #24-1	2302	6430	6628	198	0	0
5535	160	96	24	NWSW	TREND EXPLOR. CO. VATNE ETAL #1	2299	6410	6610	200	0	0
10214	160	96	24	SWNE	MARTIN OIL CO. OLSON #24-1	2298	6430	6630	200	0	0
5591	160	96	25	NWNE	NORVAL HAMERLY BEKKEDAHL #1	2353	6505	6703	198	0	0
7269	160	96	26	NENE	MERLAND RES., INC. LYSNEY #1	2295	6450	6650	200	0	13
11480	160	96	28	SENW	DIAMOND SHAMROCK CORP. EVENSON FEE 22-28	2272	6555	6752	197	0	0
11908	160	96	35	NENE	TEXAS GAS EXPLOR. CORP. NYGAARD 41-35	2315	6490	6685	195	0	0
5009	160	96	35	NESE	CONSOLIDATED OIL & GAS CO., INC. CHARLEY MYER ET AL #1	2290	6487	6680	193	0	0
6603	160	96	36	SWSW	CHAPMAN EXPLOR., INC. STATE OF ND #1-A	2295	6500	6703	203	0	0
3098	160	97	11	NESE	AMERADA PETROL. CORP. SUSIE GROUT #1	2273	6633	6792	159	12	12
7942	160	97	19	NWSE	W. H. HUNT TRUST ESTATE LEONARD ROSTEN #1	2349	6747	6955	208	18	18

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
5547	160	97	19	SENW	H. A. CHAPMAN-A. G. GOLDEN OLNEY BURTMAN #1	2308	6705	6934	229	20	20
10630	160	97	24	SESE	FULTON PRODUCING CO. THOMPSON #1-24	2280	6710	6865	155	0	4
3141	160	97	30	NWNW	HUNT PETROL. CORP. LEONARD ROSTEN #1	2297	6680	6902	222	0	27
3177	160	97	30	NWSE	HUNT PETROL. CORP. LEONARD ROSTEN #B-1	2315	6720	6940	220	0	15
10599	160	98	3	NWSE	SUN EXPLOR. & PROD. CO. SIGVALDSON #1	2243	6453	6700	247	0	5
5248	160	98	10	NENE	OIL DEVELOP. CO. OF TEXAS ROGERS #1	2243	6470	6710	240	28	28
548	160	98	11	SWNW	PURE OIL CO. OLE GUNDERSON #1	2241	6488	6727	239	23	23
3491	160	98	13	NWSE	HUNT PETROL. CORP. JOSEPH THWEDT #1	2345	6665	6862	197	0	0
10390	160	98	14	SWSE	LOUISIANA LAND & EXPLOR. CO. GERMANY 34-14 #1	2302	6607	6792	185	0	0
3196	160	98	25	NWSE	HUNT PETROL. CORP. EDGAR SALVESON ET AL #1	2309	6730	6900	170	0	10
9061	160	99	17	NESW	MOSBACHER PRUET OIL CO. MORK #17-1	2108	6390	6607	217	0	20
7116	160	99	24	NESW	TERRA RES., INC. FEDERAL #1-24	2236	6570	6780	210	0	0
10842	160	100	4	NWNW	ARCO OIL & GAS CO. ARCO WROLSON 1	2190	6415	6528	113	0	25
4837	160	100	12	SWNE	MIAMI OIL PROD., INC. ROY HAGEN #1	2112	6327	6513	186	0	10
10998	160	100	33	SENW	DIAMOND SHAMROCK CORP. FLORENCE 22-33	2064	6492	6650	158	0	13
3374	160	101	32	SESW	HUNT PETROL. CORP. IVAN OLSON #1	2257	6663	6790	127	0	20
9286	160	102	16	NWSE	LEAR PETROL. EXPLOR., INC. QUARNE #1	2139	6390	6445	55	0	12
11986	160	102	21	NWSW	MOBIL OIL CORP. PASS 21-13	2117	6427	6495	68	0	0
4962	160	102	26	SWNE	TEXACO, INC. O. M. JOHNSON #1	2263	6620	6740	120	0	0
8901	160	102	27	NENW	NUCORP ENERGY, INC. STORSETH #1	2167	6455	6565	110	0	0
9117	160	102	27	NESW	NUCORP ENERGY, INC. SCHENSTAD #1	2238	6560	6708	148	18	15
6673	160	102	30	NESW	HUNT TRUST ESTATE NELSON #1	2100	6400	6490	90	0	0
8461	160	102	31	SENE	W. H. HUNT TRUST ESTATE GERALD FISCHER #1	2101	6423	6520	97	0	10
12113	160	103	7	SENE	COASTAL OIL & GAS CORP. DOMINEK #1	2065	0	0	0	0	0
12058	160	103	16	SWNW	COASTAL OIL & GAS CORP. COGC 16-160-103 STATE #1	2053	0	0	0	0	0
7658	160	103	33	SESE	DEPCO, INC. OZARK-MAHONING #44-33	2006	6232	6323	91	0	0
836	161	92	6	SESE	CARTER OIL CO. MAYME MORRISSEY #1	2153	0	0	0	0	0
3603	161	92	9	NESE	SHELL OIL CO. DOWNIE ET AL #43-9	2145	0	0	0	0	0
4139	161	92	16	SENE	WHITEHALL WESTERN OIL, LTD.-DOME PETROL. CORP. STATE OF N. D. #1	2365	0	0	0	0	0
3937	161	92	22	SENW	PAN AMERICAN PETROL. CORP. DARRELL YOUNG #1	2416	0	0	0	0	0
4184	161	92	22	SESW	PAN AMERICAN PETROL. CORP. SMITH-WILSON #1	2456	0	0	0	0	0
3607	161	92	27	SENE	ANSCHUTZ OIL CO., INC. FOOTHILLS UNIT #15	2436	0	0	0	0	0
12287	161	92	34	SENW	TRI-W CORP. HIERATH-STATE #1	2420	0	0	0	0	0
4759	161	92	35	NWNE	MOUNTAIN MINERALS CO. LAWRENCE ANDERSON #1	2419	0	0	0	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
2044	161	92	36	SESE	DAVIS OIL CO. STATE OF NORTH DAKOTA #1	2396	0	0	0	0	0
8781	161	93	2	SWNW	PETROL. CORP. OF TEXAS IDA GRINA #1	2189	0	0	0	0	0
7575	161	93	2	SWSW	PETROL. CORP. OF TEXAS HELSETH #1	2244	0	0	0	0	0
8831	161	93	11	SWNE	TEXAKOTA, INC. ULSRUD #2	2297	0	0	0	0	0
1179	161	93	15	SENE	I. J. WILHITE-TED F. BUNHAM, SR. IDA RUDIN #1	2429	0	0	0	0	0
3592	161	93	20	SWNE	PAN AMERICAN PETROL. CORP. MILO OLSON #1	2468	0	0	0	0	0
9615	161	93	20	SWNW	WILLISTON TANK RENTAL, INC. MILO OLSON #2	2470	0	0	0	0	0
2304	161	93	31	SWSW	STEWART PETROL. FRED HUFF #1	2477	6525	6722	197	0	0
1825	161	94	3	NESW	DEKALB AGRIC. ASSOC., INC. JENNIE BERG #1	2388	6398	6417	19	0	0
6607	161	94	5	NENE	NORTH CENTRAL OIL CORP. PRIEBE-STATE #1	2404	0	0	0	0	0
2748	161	94	7	SWSE	CALVERT-VAUGHN PETROL.-KING-STEVENSON-WAUSAU PETROL. MELVIN GILBERTSON #1	2434	6455	6500	45	0	0
10123	161	94	8	SESW	LADD PETROL. CORP. WITTY #1	2455	6483	6510	27	0	0
2319	161	94	9	SWSW	SPARTAN DRILLING CO. CLARENCE T. WITTY #1	2428	6463	6490	27	0	0
3510	161	94	12	SWNW	PAN AMERICAN PETROL. CORP. CALMA DOVE #1	2415	6435	6455	20	0	0
3578	161	94	13	SWSW	PAN AMERICAN PETROL. CORP. ELMO SIMONSON #1	2405	6470	6525	55	0	0
1430	161	94	22	NESE	HUNT OIL CO. S. H. COOKSLEY #1	2419	6495	6535	40	0	0
5919	161	94	30	SESW	HOME PETROL. CORP. SONFLOT HEIRS UNIT #1	2459	6435	6655	220	0	0
5161	161	94	31	NENW	NORTH AMERICAN ROYALTIES, INC. HOLTE - BND #1	2439	6430	6620	190	0	0
2341	161	94	31	NWNE	H. L. HUNT ANNE STAVEM #1	2433	6425	6630	205	0	0
2442	161	94	31	NWNW	H. L. HUNT BANK OF N. D. #1	2451	6450	6610	160	0	0
2376	161	94	31	NWSE	H. L. HUNT SOLVEIG ARSTEIM #1	2425	6393	6610	217	10	10
2445	161	94	31	NWSW	H. L. HUNT J. SKARPHOL #1	2438	6395	6600	205	0	0
2551	161	94	32	NWSW	H. L. HUNT SOLVEIG ARSTEIM #2	2374	6413	6550	137	0	10
2711	161	94	34	NWNW	HUNT OIL CO. S. H. COOKSLEY #2	2411	6470	6623	153	0	15
9968	161	94	34	SWSE	FIRST ENERGY CORP. O'NEIL #34-34	2357	6460	6559	99	0	5
5246	161	95	5	NENE	SHELL OIL CO. VERNON TANBERG #1	2364	0	0	0	0	0
12140	161	95	8	C SE	APACHE CORP. FLB - FREDRICKSON #10-8	2389	6360	6460	100	0	0
2736	161	95	11	NWSW	LAMAR HUNT JENS H. BRODAL #1	2396	6410	6480	70	0	0
7395	161	95	12	SENW	KELDON OIL CO. ZIMMERMAN #1	2403	6430	6495	65	0	0
5693	161	95	17	NENE	SHELL OIL CO. FREDERICKSON #1	2371	6350	6374	24	0	0
8201	161	95	17	SESE	SOUTHLAND ROYALTY CO. ROBERT HEUER #1-17	2365	6280	6422	142	0	0
12158	161	95	19	SWSE	APACHE CORP. BAKKEN #19-15	2324	6277	6438	161	0	0
11589	161	95	20	NENE	LOUISIANA LAND & EXPLOR. CO. HEUER 41-20	2379	6285	6457	172	0	0
3272	161	95	20	SESE	PETROL., INC.-APACHE CORP. NELSON #1	2350	6307	6480	173	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
2938	161	95	20	SWNW	ASHLAND OIL, INC. PETER HEUER #1	2354	6300	6480	180	0	0
6167	161	95	21	SESW	TREND RES., LTD. SPOONER #1-21	2373	6332	6520	188	0	0
7863	161	95	25	NESE	HOME PETROL. CORP. KJELSHUS #1	2472	6455	6590	135	0	0
2488	161	95	25	NWNE	H. L. HUNT O. KJAELSHUS #1	2443	6450	6607	157	0	0
8707	161	95	25	SENW	HOME PETROL. CORP. KJELSHUS #2	2463	6439	6600	161	0	0
2013	161	95	26	SESW	CALVERT DRILLING CO. O. JORAANSTAD #1	2437	6440	6605	165	0	0
2121	161	95	29	NESE	PAN AMERICAN PETROL. CORP. MARTIN BAKKEN #1	2327	6250	6430	180	0	0
12071	161	95	29	NWSW	RAYMOND T. DUNCAN BERNICE 1	2309	6270	6450	180	0	8
12111	161	95	29	S2SE	RAYMOND T. DUNCAN LLOYD #1	2350	6288	6445	157	0	0
5135	161	95	29	SENW	ASHLAND OIL, INC. F. FENSTER #1-29	2291	6273	6420	147	0	0
12085	161	95	29	SWNE	RAYMOND T. DUNCAN RIVERS #1	2327	6290	6442	152	0	0
12114	161	95	30	NENW	LOUISIANA LAND & EXPLOR. CO. WSP #21-30	2319	6290	6457	167	0	0
12086	161	95	30	NWSE	RAYMOND T. DUNCAN OSBORNE #1	2295	6300	6465	165	0	0
12017	161	95	32	NENW	RAYMOND T. DUNCAN BAKKEN 1	1332	6281	6443	162	0	12
12079	161	95	32	NESW	MOBIL OIL CORP. SKOR 32-23	2327	6295	6460	165	0	18
4777	161	95	32	NWSE	TEXAKOTA, INC. MARGARET S. FRIDAY #1	2320	6270	6453	183	0	5
2996	161	96	25	SESE	HUNT PETROL. CORP. CAROLINE ROESTEL #1	2364	6387	6553	166	0	0
10402	161	96	36	NWSW	DONALD C. SLAWSON GLASOE #1-36	2392	6460	6658	198	0	22
10506	161	96	36	SWNE	DONALD C. SLAWSON STATE OF NORTH DAKOTA #1-36	2404	6452	6620	168	0	3
12283	161	97	2	SWSW	ANSCHUTZ CORP. TEAL #13-2	2167	6267	6353	86	0	0
11539	161	97	7	SWSW	DONALD C. SLAWSON O'BRIEN 1-7	2102	6225	6287	62	0	0
12307	161	97	18	SENW	ANSCHUTZ CORP. GADWALL STATE #6-18	2080	6228	6295	67	0	0
11437	161	97	19	SWNW	LOUISIANA LAND & EXPLOR. CO. OTTESON 12-19 1	2079	6153	6305	152	0	3
4394	161	97	20	SWSW	TEXACO, INC. R. W. REDLIN (NCT-1) #1	2157	6263	6443	180	0	4
10521	161	97	30	NESE	FULTON PRODUCING CO. TEXACO-REDLIN #1-30	2177	6280	6480	200	0	4
9274	161	98	10	NENE	LEAR PETROL. EXPLOR., INC. REUBEN HALL #1	2104	6200	6250	50	0	0
2722	161	98	13	SESW	SIGNAL DRILLING & EXPLOR., INC. ALFRED JOYCE #1	2060	6170	6350	180	0	0
10904	161	98	25	SESW	FULTON PRODUCING CO. BERCO-HANISCH 1-25	2104	6223	6457	234	0	10
8888	161	98	30	NWNE	LEAR PETROL. EXPLOR., INC. GORDON HALL #1	2117	6265	6350	85	0	0
10798	161	98	32	NENE	GULF OIL CORP. HALL STATE 1-32-2B	2081	6320	6473	153	0	0
10395	161	98	35	NENE	GETTY OIL CO. WILDROSE "C" #35-1	2085	6215	6400	185	0	10
12044	161	98	36	NENW	P & M PETROL. MANAGEMENT 3-36 WILDROSE STATE	2123	6230	6467	237	0	8
10171	161	98	36	NESW	GETTY OIL CO. WILDROSE #36-11	2174	6312	6520	208	0	10
9942	161	98	36	SWNW	GETTY OIL CO. WILDROSE PROSPECT #36-5	2142	6250	6450	200	0	0
9083	161	99	11	SWNW	LEAR PETROL. EXPLOR., INC. KVIGNE #1	2131	0	0	0	0	0

NDGS#	T	R	S	QQ	OPERATOR/WELL NAME	KB	TT	TB	TTh	BS	MS
11148	161	99	17	SENE	LOUISIANA LAND & EXPLOR. CO. BOE 42-17 1	2227	0	0	0	0	0
2721	161	100	15	SWSW	SIGNAL DRILLING & EXPLOR., INC. LUND #1	2242	0	0	0	0	0
8561	161	101	12	NESW	TENNECO OIL CO. RIVELAND #1-12	2268	0	0	0	0	0
10586	161	101	29	NESW	GETTY OIL CO. BLUE ROCK #29-11	2197	0	0	0	0	0
4459	161	102	27	NESE	STATES OIL CO. DOUGLAS GRAUPE #1	2091	0	0	0	0	0
10156	161	102	29	NWNW	TRANSCO EXPLOR. CO. TXC-WITTMAYER #1-29	2080	0	0	0	0	0
10126	161	102	30	NESW	HNG OIL CO. ANDERSON-STATE 30 #1	2109	0	0	0	0	0
8682	161	103	36	NWNE	PATRICK PETROL. CO. STATE #1-36	2107	0	0	0	0	0
3590	162	93	33	SWSW	PAN AMERICAN PETROL. CORP. GRACE ELIE #1	2206	0	0	0	0	0
3786	162	94	25	SESE	CHANDLER & ASSOC., INC. STEEN #1	2160	0	0	0	0	0
3276	162	95	25	NWNE	CENTRAL LEDUC OIL, INC. H. & A. NIELSEN #1	2239	0	0	0	0	0
10759	162	96	34	SWSE	SUN EXPLOR. & PROD. CO. T. L. MONTGOMERY 1	2333	0	0	0	0	0
12318	162	98	20	NWNW	CHEVRON USA, INC. ANDERSON #20-11	2225	0	0	0	0	0

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SOUTH-NORTH CROSS SECTION (A-A') AND WEST-EAST CROSS SECTION (B-B') OF THE TYLER FORMATION IN NORTHWESTERN NORTH DAKOTA

DATUM IS TOP OF TYLER FORMATION

A

NDGS # 5138
CONTINENTAL OIL COMPANY
JEARMCHUK-BANK OF NORTH DAKOTA #1-25
NE SE SEC. 25, T. 140 N., R. 98 W.
STARK COUNTY, NORTH DAKOTA
KB 2623'

16 mi
26 km

NDGS # 7586
CRYSTAL EXPLORATION AND PRODUCTION COMPANY
SCHMIDT STATE # 34-16
SW SE SEC. 16, T. 142 N., R. 98 W.
BILLINGS COUNTY, NORTH DAKOTA
KB 2661'

11 mi
18 km

NDGS # 7019
GULF OIL CORPORATION
ANDREW MARGIE # 1-23-2A
NW NE SEC. 23, T. 144 N., R. 98 W.
BILLINGS COUNTY, NORTH DAKOTA
KB 2478'

18 mi
29 km

NDGS # 6687
AMOCO PRODUCTION COMPANY
RICHARDSON # 1
SW NE SEC. 35, T. 146 N., R. 95 W.
DUNN COUNTY, NORTH DAKOTA
KB 2324'

20 mi
32 km

NDGS # 5936
ASHLAND OIL, INC.
NELSEN # 1-29
NW NE SEC. 29, T. 149 N., R. 95 W.
MCKENZIE COUNTY, NORTH DAKOTA
KB 2294'

7 mi
11 km

NDGS # 10782
THE SUPERIOR OIL COMPANY
KIRKLAND STATE # 34-23
NE SW SEC. 34, T. 150 N., R. 96 W.
MCKENZIE COUNTY, NORTH DAKOTA
KB 2364'

7 mi
11 km

NDGS # 8163
KISSINGER PETROLEUM CORPORATION
STATE # 13-36
SW SW SEC. 36, T. 151 N., R. 96 W.
MCKENZIE COUNTY, NORTH DAKOTA
KB 2457'

7 mi
11 km

NDGS # 9539
TEXACO, INC.
L. L. CHAPIN # 1
NE SW SEC. 32, T. 152 N., R. 95 W.
MCKENZIE COUNTY, NORTH DAKOTA
KB 2436'

AMSDEN FORMATION
TYLER FORMATION
OTTER FORMATION
GR
RES

A'

NDGS # 9539
TEXACO, INC.
L. L. CHAPIN # 1
NE SW SEC. 32, T. 152 N., R. 95 W.
MCKENZIE COUNTY, NORTH DAKOTA
KB 2436'

6 mi
10 km

NDGS # 2035
AMERADA PETROLEUM CORPORATION
ELDRED BRENNA T1-4
SW NE SEC. 2, T. 152 N., R. 95 W.
MCKENZIE COUNTY, NORTH DAKOTA
KB 2234'

5 mi
8 km

NDGS # 6433
TIGER OIL COMPANY
SIGJARDSON TRUST # 33-23
NW SE SEC. 23, T. 153 N., R. 95 W.
MCKENZIE COUNTY, NORTH DAKOTA
KB 2344'

8 mi
13 km

NDGS # 6131
COTTON PETROLEUM CORPORATION
COTTON-POLARIS-OMNI H.C. SMITH # 5-18
SE NE SEC. 18, T. 154 N., R. 95 W.
WILLIAMS COUNTY, NORTH DAKOTA
KB 2005'

12.5 mi
20 km

NDGS # 7853
AMERADA HESS CORPORATION
BEAVER LODGE MADISON UNIT # 5-23
SW NW SEC. 21, T. 156 N., R. 95 W.
WILLIAMS COUNTY, NORTH DAKOTA
KB 2395'

15 mi
24 km

NDGS # 8111
NOVA PETROLEUM CORPORATION
C. BLIKRE # 1
NE NE SEC. 5, T. 158 N., R. 95 W.
WILLIAMS COUNTY, NORTH DAKOTA
KB 2311'

10 mi
16 km

NDGS # 11644
ENERGY RESOURCES OF NORTH DAKOTA, INC.
ENERGY OVERLEE # 1
SW NW SEC. 19, T. 160 N., R. 94 W.
BURKE COUNTY, NORTH DAKOTA
KB 2366'

10 mi
16 km

NDGS # 6607
PRIEBE-STATE # 1
NE NE SEC. 5, T. 161 N., R. 94 W.
BURKE COUNTY, NORTH DAKOTA
KB 2404'

AMSDEN FORMATION
TYLER FORMATION
OTTER FORMATION
SPEARFISH FORMATION (P-Ts)
KIBBEY FORMATION
GR
RES

B

NDGS # 8730
POGO PRODUCING COMPANY
BERGSTROM # 1-24
SW SW SEC. 24, T. 154 N., R. 103 W.
WILLIAMS COUNTY, NORTH DAKOTA
KB 2295'

16 mi
26 km

NDGS # 9854
MESA PETROLEUM COMPANY
BURDICK # 1-28
SE SW SEC. 28, T. 154 N., R. 100 W.
WILLIAMS COUNTY, NORTH DAKOTA
KB 2076'

19 mi
31 km

NDGS # 7931
MAPCO, INC.
NCDA # 14-33
SE SW SEC. 33, T. 155 N., R. 97 W.
WILLIAMS COUNTY, NORTH DAKOTA
KB 2124'

11 mi
18 km

NDGS # 6131
COTTON PETROLEUM CORPORATION
COTTON-POLARIS-OMNI H.C. SMITH # 5-18
SE NE SEC. 18, T. 154 N., R. 95 W.
WILLIAMS COUNTY, NORTH DAKOTA
KB 2005'

28 mi
45 km

NDGS # 9949
BROOKS EXPLORATION, INC.
NELSON # 1-3
SE NW SEC. 3, T. 155 N., R. 91 W.
MOUNTRAIL COUNTY, NORTH DAKOTA
KB 2229'

17.5 mi
28 km

NDGS # 7238
UNION OIL COMPANY OF CALIFORNIA
GYNES # 1-85
NW NE SEC. 5, T. 154 N., R. 88 W.
MOUNTRAIL COUNTY, NORTH DAKOTA
KB 2132'

12.5 mi
20 km

NDGS # 11669
CENEX
SMITH # 10-30
NW SE SEC. 30, T. 155 N., R. 86 W.
WARD COUNTY, NORTH DAKOTA
KB 2160'

AMSDEN FORMATION
TYLER FORMATION
OTTER FORMATION
KIBBEY FORMATION
SPEARFISH FORMATION (P-Ts)
GR
RES

B'

EXPLANATION

- CONFORMABLE CONTACT
- UNCONFORMABLE CONTACT
- UPPER BOUNDARY OF LOWER UNIT
- SUBUNIT BOUNDARY OF UPPER UNIT

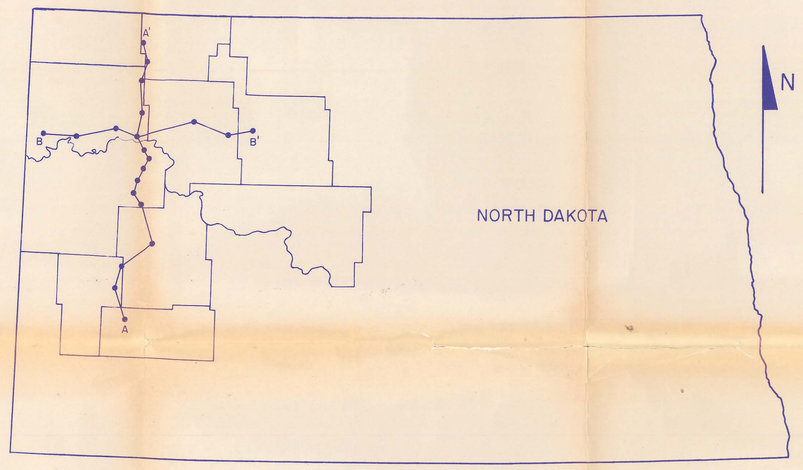
WELL LOG ABBREVIATIONS

GR GAMMA RAY
RES RESISTIVITY
KB KELLY BUSHING

SCALE

HORIZONTAL DISTANCE BETWEEN WELLS IS LABELED BETWEEN LOG CAPTIONS

VERTICAL SCALE
0
50 FEET
100



MILES
0 10 20 30 40 50
KILOMETERS
0 20 40 60 80

LARRY R. QUANDT (1990) PLATE 2

ISOPACH MAP OF THE TYLER FORMATION, NORTHWESTERN NORTH DAKOTA

SASKATCHEWAN

N

MONTANA

EXPLANATION

- STATE BOUNDARY
- COUNTY BOUNDARY
- SOUTHERN BOUNDARY OF STUDY AREA
- CONTOUR LINE
- LIMIT OF TYLER FORMATION

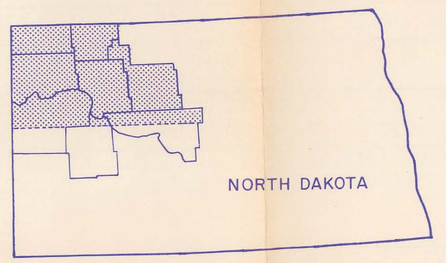
MILES

0 5 10 15 20 25

0 5 10 15 20 25 30 35 40

KILOMETERS

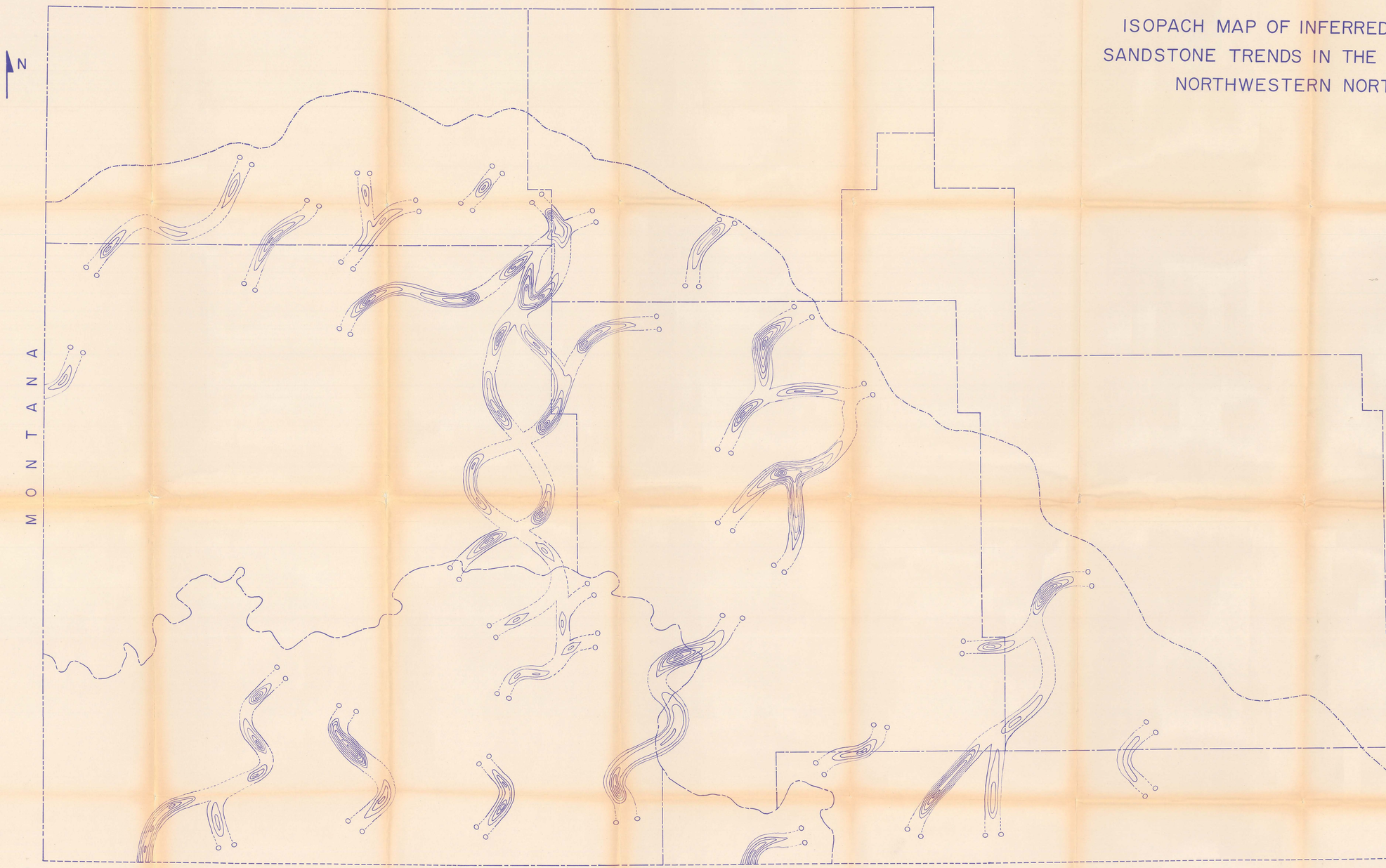
CONTOUR INTERVAL IS 25 FEET



LOCATION MAP

LARRY R. QUANDT (1990)

ISOPACH MAP OF INFERRED RIVER CHANNEL SANDSTONE TRENDS IN THE TYLER FORMATION, NORTHWESTERN NORTH DAKOTA



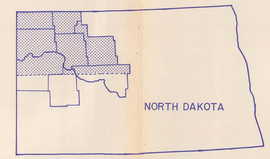
EXPLANATION

- STATE BOUNDARY
- COUNTY BOUNDARY
- SOUTHERN BOUNDARY OF STUDY AREA
- CONTOUR LINE
- LIMIT OF TYLER FORMATION

MILES
0 5 10 15 20 25

KILOMETERS
0 5 10 15 20 25 30 35 40

CONTOUR INTERVAL IS 10 FEET



LOCATION MAP